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ARIZONA STATE UNIVERSITY ■ COLLEGE OF BUSINESS
CENTER FOR BUSINESS RESEARCH

Arizona Industrial Structure

Services and Trade Rank One and Two

Misinformation concerning the Arizona economy – particularly its industrial structure – still is widespread. Such inaccuracies are unnecessary, since a variety of data is available, and unfortunate because they may adversely affect both the government's allocation of resources and the decisions of those considering relocation to Arizona.

For example, tourism frequently is reported to be Arizona's second largest industry, and agriculture sometimes is called third largest. Neither statement is accurate. The purpose of this study is to clear up confusion and misrepresentation regarding the Arizona industrial structure.

While an accurate representation of the structure is presented in this article, a definitive ranking cannot be agreed upon. industries may be defined in a variety of ways and quantified by several measures. Other difficult-to-quantify concerns must also be considered.

ARIZONA'S MAJOR INDUSTRIES

The Standard Industrial Classification (SIC), developed by the federal government, is by far the most widely used system of categorizing industries. Hierarchical in nature, the SIC combines narrowly defined industries into progressively broader groups. Nine major industries finally result: agriculture; mining; construction; manufacturing; transportation, communications and public utilities (TCPU); trade; finance, insurance and real estate (FIRE); services; and government.

See "AZ Industries," page 2

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Statewide Report

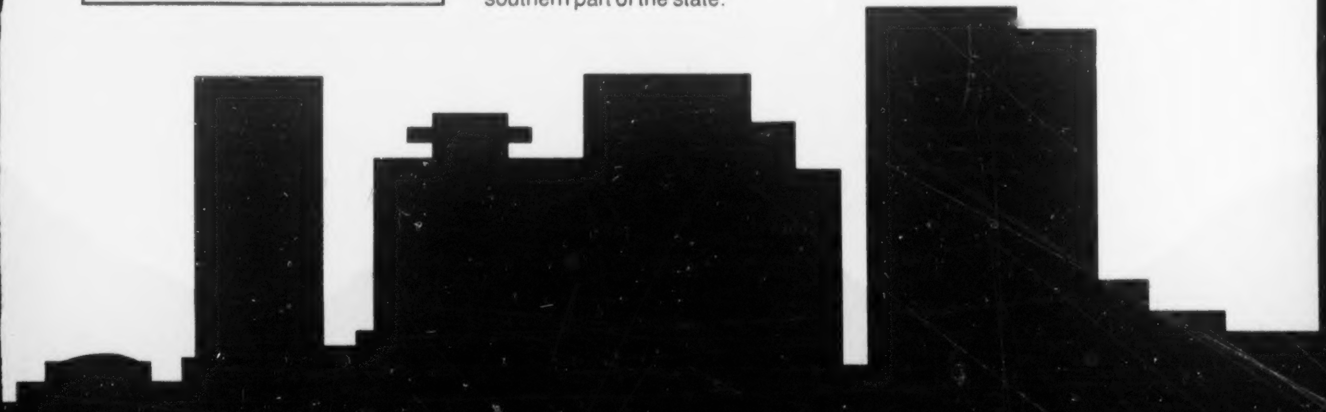
Small-Town Living Not Always Cheaper

Across the United States, living costs are generally lower in small communities than in large cities or metropolitan areas. However, cost-of-living information compiled for four non-metropolitan communities in Arizona reveal that this national pattern does not hold in all cases. The cost of living was found to be higher in two northern Arizona towns than in Phoenix or Tucson but lower in two communities in the southern part of the state.

BACKGROUND

Measures of the cost of living in Arizona communities are of potential interest to many people both in and outside the state. This information is particularly useful to individuals considering a move from one city to another and to businesspeople planning to relocate or expand to another area.

See "Cost of Living," page 5



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"AZ Industries," from page 1

Employment, PI, GSP

Several economic indicators can be used to measure the size and activity of an industry. For Arizona, at the level of the nine major industries, three measures are readily available and provide internally consistent estimates among industries. However, these measures – employment, personal income (PI) and gross state product (GSP) – may not agree on an industry's relative size.

Each major industry's share of these three measures is shown in Figure I. Clearly, the four largest industries are services, trade, manufacturing and government. Each is appreciably larger than the construction and TCPU sectors, which in turn contribute noticeably more employment, income and GSP than the agriculture and mining industries. Table 1 presents a ranking based on the consensus of the three measures.

Some of the deviations among these measures are easily explained. Services and trade are labor-intensive industries. Their employment numbers, as well as those of agriculture, include many seasonal and part-time workers. Salaries are relatively low. Thus, each industry is larger when quantified by employment than by either of the dollar measures. In contrast, manufacturing, mining, and TCPU are high-paying industries, not highly labor-intensive. Their shares of employment, therefore, are smaller than their shares of PI and GSP.

Only the sectoral shares of finance, insurance and real estate vary appreciably by economic measure. The value added by real estate, through rental income and taxes paid, is primarily responsible for the relatively large share of GSP.

Other Measures

Other gauges of size, particularly those related to sales or value, commonly are used to rank industries. Such comparisons are inappropriate, however: The unit of measurement is not consistent among industries, and the same indicators are not available for all industries. It is misleading and inaccurate to base comparisons on such incomparable measures.

A blatant case of "comparing apples and oranges" results from likening manufacturing *output* to tourism *expenditures* to *value* of agricultural or mining production. Omitting all other industries from the comparison makes the resulting conclusions even more erroneous. This specific example is responsible for much of the misinformation cited earlier.

ANOTHER DEFINITION OF INDUSTRIES

A major shortcoming of the SIC is that tourism is not defined as an industry. Tourism encompasses a portion of several SIC industries, particularly trade, services and transportation. Because most businesses, such as restaurants or gas stations, serve both tourists and residents, tourism cannot be measured by conventional means.

Tourism

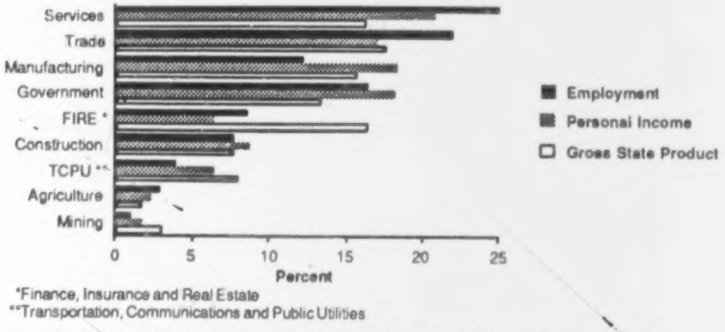
Most tourism data derives from three studies conducted at ASU for the Arizona Office of Tourism. The first two studies, in fiscal years 1975-76 and 1979-80, were conducted by the Center for Business Research. The last study, in 1984, was prepared by the College of Public Programs, using the same methodology.

The primary outputs of these studies – estimates of the total number of tourists and of total tourist expenditures – cannot be compared to other indicators in other industries. However, the tourism studies did include an estimate of employment in the tourism industry (80,010 in 1984). While it is likely that the impact of tourism estimated in these studies, including employment, is overestimated[1], the lack of more accurate data forced the use of the 80,000-jobs figure in comparing tourism employment to that in other industries.

Industry Rankings

The result of this comparison is shown in Table 2. In addition to removing the 80,000 tourism workers from the appropriate industries, several of the major industries were subdivided to produce a relatively small number of industries with definitions more specific to the Arizona economy. For instance, high-technology manufacturing and real estate are shown as separate indus-

FIGURE I
ARIZONA SECTORAL SHARES, 1984



*Finance, Insurance and Real Estate
**Transportation, Communications and Public Utilities

Source: Center for Business Research, College of Business, Arizona State University; and U.S. Department of Commerce, Bureau of Economic Analysis.

TABLE 1
AVERAGE RANK ORDER OF ARIZONA'S NINE MAJOR INDUSTRIES
Based on Employment, Personal Income, Gross State Product

1. Services
2. Trade
3. Manufacturing
4. Government
5. Finance, Insurance and Real Estate
6. Construction
7. Transportation, Communications and Public Utilities
8. Agriculture
9. Mining

Source: Center for Business Research, College of Business, Arizona State University

tries. The definition of industries in Table 2 admittedly is somewhat arbitrary. Other reasonable definitions could be constructed, illustrating the difficulty of using any scheme other than the SIC to rank industries.

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[1] An overstatement could have resulted from both an overestimate of the number of tourists as well as overvaluation by the tourists of their expenditures. More information is included in the complete report on this study (see gray box on page 5).

Even after removing the tourism component and subdividing the remaining services and trade employment each into three subindustries, their components still rank as the largest industries. Agriculture and mining, even with no subdivision, are found near the bottom of the list. Tourism falls in the middle.

MAJOR INDUSTRIES, BY COUNTY

Wide differences exist in the industrial structures of Arizona's 15 counties. In terms of the total state economy, these variations are relatively insignificant since the two metropolitan counties account for such a large share of the state's economic activity (84 percent of employment, for example).

The state as a whole may barely feel the effects of problems in rural industries such as mining or agriculture. To illustrate, the Arizona economy has grown strongly since 1982 even though both industries have remained mired in slumps. Several counties, however, are highly dependent on these industries. Mining is the primary employer in Greenlee County and provides significant numbers of jobs in Gila and Pinal counties. Agriculture is important to Yuma and La Paz counties.

Manufacturing is prominent in Maricopa County but hardly is found in Apache, Graham, Greenlee and La Paz counties. Trade is a significant part of the economy of most counties, particularly in Santa Cruz because of the international border and traffic through Nogales. Services, too, has a large presence in most counties, but is nearly nonexistent in Greenlee County.

Coefficient of Specialization

Compared to the Arizona industrial structure, the economies of many counties show considerable dependence on one or two industries. This dependence can be gauged by the coefficient of specialization, which adds up the differences between county sectoral shares and Arizona sectoral shares. The higher the value, which can range from zero to 100, the higher the specialization.

TABLE 2
RANK ORDER OF ARIZONA'S INDUSTRIES
By 1984 Employment

	Employment	*Share*
1. Miscellaneous Services*	148,000	10.2%
2. Miscellaneous Retail Trade**	131,500	9.1
3. Construction	111,500	7.7
4. Business and Repair Services	107,500	7.4
5. Government (excluding military and schools)	104,800	7.2
6. Manufacturing (excluding high technology)	103,800	7.2
7. Schools	95,600	6.6
8. Retail Trade - Food Stores and Eating Places	87,400	6.0
9. Tourism	80,000	5.5
10. Health Services	75,800	5.2
11. Manufacturing - High Technology	72,600	5.0
12. Banking, Finance, Insurance	63,600	4.4
13. Wholesale Trade	61,400	4.2
14. Real Estate	60,500	4.2
15. Transportation, Communications, Public Utilities	48,800	3.4
16. Farm and Agricultural Services	43,100	3.0
17. Military	37,500	2.6
18. Mining	15,600	1.1
TOTAL	1,449,000	100.0

*Includes personal services, private households, amusement and recreation services, and professional and social services other than health.

**Includes building materials, general merchandise stores, apparel stores, home furnishings stores, and automotive dealers and service stations.

Source: Center for Business Research, College of Business, Arizona State University; from data of the U.S. Department of Commerce, Bureau of Economic Analysis.

Greenlee County, almost entirely dependent on mining, has the highest coefficient (74). The five next most specialized counties range from Cochise (41) through Apache and Pinal to Yuma and Graham (31). Each of these counties is dependent on government. Most are dependent on agriculture or mining, as well, but have little manufacturing.

Most highly diversified, with coefficients of 7, are the two metropolitan counties. The economies of Mohave (9) and Yavapai (13) also encompass a mixture of industries.

Coefficient of Concentration

The geographic dispersion of industries across Arizona, compared to the state's population distribution, can be measured by the coefficient of concentration. Values again range from zero (spread evenly through the state with the population) to 100 (total concentration in one area).

Mining is the most concentrated industry, with a coefficient of 62. Found primarily in Greenlee and Pinal counties, little mining is done in Maricopa County, where 56 percent of the population reside. Agriculture, concentrated in Yuma County, with relatively little activity in Pima County; and FIRE, concentrated in Maricopa County, with relatively little activity in Pima County given its population, each have coefficients of 28. Except for government, with a coefficient of 9, the other industries all have a modest concentration in Maricopa County. Thus, even after adjusting for population, Maricopa County is Arizona's economic center for all industries except government, mining and agriculture.

ECONOMIC BASE ANALYSIS

In addition to direct measures of an industry's size, such as employment or GSP, other factors should be considered. Economic base theory assumes that certain industries are "basic" in that their growth leads and determines the region's overall development. Basic industries bring in money from outside the region by producing goods and services for export. In contrast, nonbasic activities result from the region's overall growth, serving only the local population.

Location Quotients

The simplest means of identifying basic activities is by using a location quotient: the ratio of an industry's share of the regional economy to that industry's share of the national economy. If the ratio is greater than one, a portion of the industry's output is assumed to be basic (exported out of the region). While location quotients are crude measures, alternatives are prohibitively costly.

Arizona location quotients for major industries, based on several economic measures, are shown in Figure II. Although the different measures do not provide identical location quotients, they do coincide on the industries that provide basic activities.

Nature of Basic Activities

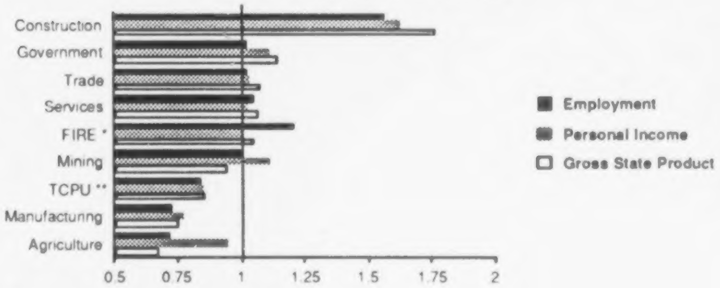
The location quotients of Arizona's major industries should be carefully interpreted. For example, while metal mining is almost entirely a basic industry, other types of mining, such as oil and gas extraction, are nearly non-existent. The entire mining industry, therefore, has little, if any, *net* exports.

According to location quotients, construction is Arizona's most basic industry. Construction is "exported" in that houses and other buildings are frequently sold to parties living outside the state or to new residents. Thus, the construction industry is a measure of simple growth. It leads and determines Arizona's overall development because heavy inmigration fuels the economy.

Government is Arizona's second most basic industry, primarily because several large military bases are located in the state. Other large federal programs, such as those pertaining to the national forests and Indian reservations, also contribute as basic activities.

Services, trade and FIRE also have small basic components. Most of the "exports" of services relate to tourism. Some of trade's exports are also sold to tourists; others are purchased by the state's new residents, who frequently need items such as autos and home furnishings. FIRE's exports largely result from real estate activity, again due to rapid inmigration.

FIGURE II
ARIZONA LOCATION QUOTIENTS



*Finance, Insurance and Real Estate
**Transportation, Communications and Public Utilities

Source: Center for Business Research, College of Business, Arizona State University; and U.S. Department of Commerce, Bureau of Economic Analysis.

The manufacturing industry is not a net exporter. In particular, the location quotient for nondurable goods is very low, with no component industry a net exporter. The durable goods portion of the industry, however, has a location quotient near one. Several of its subsidiary industries, particularly those involved with high-technology products, have basic components.

MULTIPLIERS

Once introduced, primary or initial spending tends to "multiply" through a local economy before finally escaping. For example, spending by a tourist from New York introduces new money into Arizona. The merchant receiving this money may, in turn, spend it on goods manufactured in the state. Eventually, however, the money escapes Arizona when the purchased goods or services are from outside the state.

Should tourism expand rapidly, merchants may need to add employees and purchase more goods manufactured in Arizona. In turn, the Arizona manufacturer may need to add employees and purchase more raw materials. Thus, the additional tourist expenditures ripple through much of the economy.

The degree of multiplication varies by geographic area and by nature of the original spending. The multiplier also varies by economic measure: Additional output by one industry may create more total output by all industries but fewer new jobs than the same amount of additional output by another industry. No single multiplier exists for a geographic area.

Arizona Multipliers

The U.S. Department of Commerce has produced multipliers for 38 industries in Arizona, utilizing three economic measures: output, earnings and employment. Even these multipliers represent an oversimplification. The multiplier for any given industry probably is different in Phoenix than in Flagstaff. Further, the multiplier probably varies temporally, not immediately reaching its peak.

For most industries, the output multiplier, i.e., the total dollar change in output of all industries that occurs for each additional dollar of output by a given industry, falls into a narrow 1.8 to 2.0 band. It ranges from 1.38 for real estate to 2.45 for "manufacturing – primary metals industries."

More variation occurs in the earnings multiplier, i.e., the total dollar change in earnings of households employed in all industries for each additional dollar of output by a given industry, because of deviations in wage rates and in use of part-time and seasonal labor. The multiplier ranges from $.15 in real estate to $.89 in health services.

Wide deviation is also present in the employment multiplier, i.e., the total change in the number of jobs in all industries for each additional $1 million of output by a given industry. For example, only 12 jobs would accrue from this amount of additional manufacturing of motor vehicle equipment, whereas 74 jobs would

TABLE 3
IMPACT OF $100 MILLION CHANGE IN FINAL DEMAND
Selected Examples

	Output in Millions	*Earnings in Millions*	*Employment (Number of Jobs)*
Out-of-State Tourism	$157.5	$54.1	4,723
New Construction	207.6	69.4	4,020
Copper Mining	180.5	54.0	2,470
Agricultural Production	195.2	54.0	4,280
Manufacturing of Electronic Equipment	191.4	65.1	3,250
Real Estate	138.0	15.3	1,370

Source: Center for Business Research, College of Business, Arizona State University; and U.S. Department of Commerce, Bureau of Economic Analysis.

result from such an addition to personal services.

Examples

The effect of an additional $100 million of output delivered to final demand – that is, to ultimate purchasers, such as to consumers outside Arizona – is illustrated for various situations in Table 3. The estimate for the tourism industry, which consists of several diverse sectors such as retail trade and transportation, is based on several multipliers; the $100 million was distributed according to spending patterns found in the 1984 tourism study. The tourism example assumes that retail goods purchased by tourists in Arizona were manufactured elsewhere. The multipliers would be larger if the goods were produced in Arizona.

Of the examples shown, new construction has the largest impact on both total output and total earnings. More jobs, however, would be created by additional tourism and agricultural production.

TRENDS

The four Cs (agriculture and mining) were important to Arizona in the past. In 1929, for example, these industries together contributed nearly one-third of the state's personal income. Mining declined first, replaced by government during the 1930s. Agriculture declined more recently, replaced by manufacturing during the 1950s and by services in the last few years.

When taking into account changes in the national industrial structure since 1929, the growth of three industries in Arizona has been particularly more rapid than the expansion of their national counterparts: manufacturing; construction; and finance, insurance and real estate. While the sectoral shares of government and services increased in Arizona, similar advances were occurring nationwide.

Most changes to the state's industrial structure did not occur recently. By the mid-1960s, the economy's structure closely resembled that of today.

– **Tom R. Rex**
Research Manager

Complete Report Available

This article is the executive summary of a larger report on Arizona's industrial structure. Copies of the complete report, which includes more than 20 pages of tables, as well as more in-depth textual analysis, may be obtained by calling or writing the Center for Business Research, College of Business, Arizona State University, Tempe, AZ 85287; (602) 965-3961.

"Cost of Living," from page 1

The most readily available cost-of-living data for U.S. cities are published quarterly by the American Chamber of Commerce Researchers Association *(ACCRA Intercity Cost of Living Index)*. The number of cities and towns participating in the ACCRA study varies each quarter but generally exceeds 225, providing a wide base of data on communities of all sizes nationwide. Unfortunately, within Arizona, only Phoenix and Tucson currently participate in the study, and no cost-of-living information is publicly available for Arizona communities outside the state's two metropolitan areas.

As part of the Center for Business Research's ongoing research program on inflation and living costs in Arizona, the Center recently completed the pilot phase of a project to develop information on relative living costs in Arizona communities. The Center collected price data in Casa Grande, Page, and Show Low – three non-metropolitan communities located in different parts of the state. This information was then compiled with the ACCRA's 1986 living cost data for the Phoenix and Tucson metropolitan areas and 1985 data for Yuma, to produce a first look at the pattern of relative living costs statewide.

METHODOLOGY

The Center based its procedures for computing measures of relative living costs for each of the communities on the methodology used in the ACCRA study. This methodology employs a fixed market-basket approach: that is, the same set of goods and services are priced in each locality. The price data are then weighted by the relative importance of each type of good/service among the total consumer expenditures of typical U.S. households to derive an overall measure of the relative cost of living. It is important to recognize that differences in living costs identified by this fixed market-basket methodology are due to local differences in prices. Differences in lifestyle, reflected by differences in the type and quantity of goods and services typically purchased, are not taken into account.

For this study, the relative cost-of-living measures were computed by comparing prices of a sample of 59 consumer goods and services in each of the other five Arizona communities with Phoenix prices for the same items. From these price data, cost-of-living indexes were computed for each locality. The indexes show the ratio of living costs in each city relative to the Phoenix area, where the cost of living is expressed as a value of 100. Thus, an index value of 105 would indicate that the relative cost of living is 5 percent higher than that in the Phoenix area. In addition to an overall index, separate indexes were calculated to show each city's relative cost of living for six major expenditure categories – grocery items, housing, utilities, transportation, health care, and miscellaneous goods and services.

FINDINGS

A comparison of these indexes of relative living costs for Casa Grande, Page, Show Low, Tucson, and Yuma are presented in Table 1. The overall cost-of-living index figures show living costs to be lower in the two non-metropolitan communities in the southern part of the state than in the Phoenix area. In the case of the two northern Arizona towns, living costs for the average household are 4 percent higher in Page than in Phoenix and 5 percent higher in Show Low.

The overall index value for Tucson from the second quarter 1986 ACCRA study reveals a cost of living that is 4 percent lower than that in the Phoenix area and similar to the levels in Casa Grande and Yuma. Inspection of detailed information from the ACCRA study demonstrates, however, that almost all of the Tucson/Phoenix cost differential results from much lower utility costs in Tucson. If utility costs are excluded from the calculations, overall cost levels are very close to those for Phoenix.

Cost differences for each of the six expenditure categories follow:

(1) *Food:* Food costs were higher in all five Arizona communities included in the study, relative to those in metropolitan Phoenix. Price levels were particularly high in the two northern Arizona towns. Retail stores in both Page and Show Low must incur substantial transportation costs to ship goods from distribution centers (usually located in the Phoenix area). The small and isolated nature of the retail sector in these communities also results in a much different competitive environment – fewer sales, less discount pricing, etc. – than is found in the state's large metropolitan areas.

(2) *Housing:* Housing costs are higher in Phoenix than in each of the other five communities included in the study. Again relative to the southern Arizona cities, housing costs were found to be higher in Page and Show Low, although still lower than in the Phoenix area. Specific circumstances in both of these communities cause land prices to be higher than in many other non-metropolitan areas. The Show Low/Lakeside/Pinetop area has experienced rapid growth in recent years, with its emergence as one of the state's prime vacation/recreation destinations. In Page, the supply of residential land is limited, since the city is surrounded by the Navajo Reservation and federal land.

(3) *Utilities:* No consistent pattern is evident for utility costs. As noted above, utility costs for Tucson, as reported in the ACCRA study, are much lower than for the other five cities included in the study. The difference between Show Low and the Phoenix area results from the smaller town's much higher telephone charges and somewhat higher electric rates. Yuma's higher utility costs result primarily from higher electrical consumption.

TABLE 1
COMPARATIVE LIVING COSTS FOR SIX ARIZONA COMMUNITIES
Second Quarter 1986*
(Phoenix = 100)

Index	Tucson	Casa Grande	Page	Show Low	Yuma
Overall	96	96	104	105	95
Food	103	103	121	115	104
Housing	92	85	97	99	79
Utilities	71	102	99	105	112
Transportation	103	106	105	113	96
Health Care	95	86	97	104	85
Miscellaneous Goods/Services	100	96	102	102	99

*Yuma data is for second quarter 1985.

Source: Compiled by the Center for Business Research, College of Business, Arizona State University; using data from Center surveys and *ACCRA Intercity Cost of Living Index,* Second Quarter 1985 and Second Quarter 1986.

TABLE 2
COST OF LIVING
BY POPULATION SIZE
(U.S. Average = 100)

Population Class	Index
Less than 25,000	96
25,000 - 74,999	97
75,000 - 124,999	99
125,000 - 199,999	99
200,000 - 399,999	100
400,000 - 999,999	101
1 million or more	106

Source: T.D. Hogan and T.R. Rex, "Intercity Differences in Cost of Living: Results from a New Database," *Growth and Change,* October 1984, pp. 16-23.

(4) *Transportation:* Transportation costs were generally higher outside the Phoenix area, with the exception of Yuma. Most of the differentials resulted from higher retail gasoline prices in the communities outside the Phoenix metropolitan area.

(5) *Health Care:* Costs of health care commodities and services were higher in the Phoenix area than in each of the other cities, with the exception of Show Low. Drug/medical supply prices were higher outside the Phoenix area, but this difference was more than offset by lower hospital costs and professional fees in the other cities, with the exception of Show Low.

(6) *Miscellaneous goods and services:* Prices within this expenditure category, which comprises a variety of personal and household services and consumer goods, were not found to vary greatly among the six Arizona cities. A general pattern existed of somewhat higher prices for consumer goods items and lower prices for services in the non-metropolitan communities.

COMPARISON TO NATIONAL PATTERNS

Previous studies of intercity differences in living costs usually have found that the larger the community, the higher the cost of living. This relationship is also demonstrated in

TABLE 3
COMPARATIVE COST OF LIVING INDEXES FOR TRANSPORTED VERSUS NON-TRANSPORTED GOODS AND SERVICES
Second Quarter 1986
(Phoenix Overall Index = 100)

Index	Casa Grande	Page	Show Low
Transported Goods	102	112	110
Non-transported Goods/Services	91	97	100

Source: Center for Business Research, College of Business, Arizona State University.

cost-of-living data from the 1980 ACCRA Study, if it is organized by the size of each community's urban area, as defined by the 1980 Census (see Table 2). The difference averaged 10 percent between the smallest towns and the largest urban areas. This relationship was identified for the housing, transportation, health care, and miscellaneous expenditure categories but not for either food or utility costs.

The pattern of cost-of-living differentials discovered in the sample of six Arizona communities is somewhat different than this national pattern. Living costs in the two smallest cities, Page (a 1985 population of 6,000) and Show Low (population 5,000), were found to be higher than in larger communities. For the four southern Arizona cities, however, the positive link between size and living costs was evident, though not to the same degree that it is on a national level.

Geographical isolation and the small size of their retail sectors apparently result in the higher prices of many consumer goods in the two northern Arizona communities. A comparison to the two large metropolitan areas revealed that the four smaller, rural communities charged lower prices for many services and higher prices for the many consumer goods that must be transported from distribution centers in the metropolitan areas. If the goods/services are grouped into two major categories – transported items (groceries, apparel, etc.) and non-transported items (housing, utilities, services, etc.) – and relative cost-of-living indexes for the two groups are calculated, a pattern emerges: Prices of transported items in the non-metropolitan localities are higher than in the Phoenix area, while services and other non-transported items are generally less costly outside the metropolitan areas (Table 3).

– Timothy D. Hogan

Dr. Hogan is Professor of Economics and Director of the State Data Center/ASU.

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Valley Inflation Still Near 1 Percent

The Metropolitan Phoenix Consumer Price Index again measured mild inflation during third quarter 1986, the fifth consecutive quarter of little or no change in prices of goods and services. However, the 0.6 percent advance, on both an unadjusted and seasonally adjusted basis, matched the largest gain of these five quarters (see Table 1).

TABLE 1
PERCENT CHANGES IN METROPOLITAN PHOENIX CONSUMER PRICE INDEX

		Seasonally Adjusted from Preceding Quarter						
Expenditure Category	*Relative Importance*	*1st 1985*	*2nd 1985*	*3rd 1985*	*4th 1985*	*1st 1986*	*2nd 1986*	*3rd 1986*
ALL ITEMS	100.0	1.6	1.3	0.3	0.6	-0.2	0.4	0.6
Food and Beverages	18.7	1.6	0.9	-0.1	2.3	0.5	1.0	2.3
Housing	39.5	1.2	0.6	1.8	-0.4	0.7	0.2	1.0
Apparel and Upkeep	4.8	1.8	3.3	-1.9	2.5	-3.3	5.6	-2.5
Transportation	21.2	2.0	2.0	-2.1	-0.6	-2.5	-1.9	-1.1
Medical Care	6.9	2.6	2.7	1.6	1.8	1.3	1.7	0.2
Entertainment	4.6	2.9	3.5	2.1	5.3	-1.7	2.4	-0.6
Other Goods and Services	4.3	1.7	1.7	-0.2	1.2	1.7	0.7	2.1

Source: Center for Business Research, College of Business, Arizona State University, in cosponsorship with Valley National Bank.

The third quarter 1986 index, 193.7 (1977 = 100), was only 1.2 percent higher than the index for third quarter 1985.

COMPONENT INDEXES

Food and beverage prices, on a seasonally adjusted basis, matched the greatest gain in at least three years, contributing the most to the overall inflation rate. Prices of other goods and services also climbed more than in at least three years.

These gains, however, were largely offset by the fifth consecutive quarterly decline in transportation costs; gasoline prices again fell at double-digit rates. Medical care costs also helped to moderate overall inflation by recording their smallest gain in several years.

Food and Beverages

A sharp 3.2 percent increase in grocery prices led this category's advance. In contrast, prices for food away from home continued to rise moderately, and prices of alcoholic beverages fell (see Table 2).

Within the food at home category, prices of cereal and bakery products again advanced moderately, while the index for other food at home declined slightly. However, after little change in the second quarter, prices of both dairy products and fruits and vegetables rose approximately 3.5 percent.

The index for meats, poultry, fish and eggs soared 7.1 percent during the third quarter, following five consecutive quarters of declines or insignificant gains. Prices of poultry and pork jumped 19 and 10 percent, respectively, while all other subcategories posted gains in excess of 3.5 percent.

Housing

Modest inflation persisted in the housing category. Prices of fuel and other utilities again fell, led by the eighth consecutive decline in natural gas rates. The index for household furnishings and operations also dropped slightly, for the second straight quarter.

While homeowners' costs continued to rise at a moderate rate, renters' costs jumped more than 3 percent, the largest gain in 2-1/2 years. This surge, however, followed three consecutive quarters of virtually no change.

Transportation

Transportation costs dropped an additional 1.1 percent during third quarter 1986, placing them 6.2 percent lower than they were in third quarter 1985. After falling nearly 16 percent during the second quarter, gasoline prices declined another 11.5 percent during the third quarter; however, they were not the sole contributor to the transportation category's third quarter decline.

Vehicle finance charges dropped a steep 6 percent; these charges generally have been falling since late 1984. Public transportation costs declined 5 percent, in part due to lower airline fares. Prices of vehicle parts and equipment and of new autos also were lower.

These declines were offset, in part, by a huge 17.2 percent boost in auto insurance premiums; the increase during the four quarters ending third quarter 1986 was 25 percent.

TABLE 2
METROPOLITAN PHOENIX CONSUMER PRICE INDEX
Third Quarter 1986

Expenditure Category	Index (1977=100) *Last Quarter*	Index (1977=100) *This Quarter*	Percent Change from *Last Quarter**	Percent Change from *Year-Ago Quarter*
ALL ITEMS	192.6	193.7	0.6	1.2
Food and Beverages	178.3	181.1	2.3	5.9
Food	178.5	181.5	2.6	5.7
Food at Home	175.2	179.3	3.2	6.3
Cereal and Bakery Products	197.8	197.2	0.8	6.2
Meats, Poultry, Fish, and Eggs	156.3	166.5	7.1	6.5
Dairy Products	162.2	166.4	3.6	3.4
Fruits and Vegetables	190.0	191.3	3.5	7.9
Other Food at Home	170.9	170.8	-0.3	6.2
Food Away from Home	181.9	182.8	1.4	4.6
Housing	202.2	205.1	1.0	1.5
Shelter	218.1	222.5	2.0	3.5
Renters' Costs**	116.4	120.3	3.4	3.6
Homeowners' Costs**	110.4	111.9	1.3	3.5
Fuel and Other Utilities	172.2	173.4	-1.2	-4.5
Gas (piped) and Electricity	188.7	192.8	-0.9	-6.5
Household Furnishings/Operations	153.6	153.5	-0.4	0.4
Apparel and Upkeep	151.7	146.8	-2.5	1.8
Transportation	178.2	176.0	-1.1	-6.2
Private Transportation	175.0	172.7	-0.7	-6.3
New and Used Cars	191.0	193.3	0.2	-0.3
Motor Fuels	154.9	134.1	-11.5	-31.6
Public Transportation	230.3	228.7	-5.0	-5.2
Medical Care	267.4	269.7	0.2	4.9
Entertainment	195.1	194.3	-0.6	5.2
Other Goods and Services	177.1	191.7	2.1	5.7

*Seasonally adjusted **Base period is second quarter 1983.

Source: Center for Business Research, College of Business, Arizona State University, in cosponsorship with Valley National Bank.

TABLE 3
METROPOLITAN PHOENIX CONSUMER PRICE INDEX
UNITED STATES AND COMPARATIVE CITIES
Third Quarter 1986

Expenditure Category	Percent Change from Last Quarter* *Phoenix*	Percent Change from Last Quarter* *United States*	Percent Change from One Year Ago *Phoenix*	Percent Change from One Year Ago *United States*	Percent Change from One Year Ago *Denver*	Percent Change from One Year Ago *San Diego*
ALL ITEMS	0.6	0.7	1.2	1.6	-0.5	2.8
Food and Beverages	1.6	1.7	5.9	4.2	-0.8	4.0
Housing	1.4	1.1	1.5	2.7	0.2	5.5
Apparel and Upkeep	-3.2	0.3	1.8	0.8	-1.2	-0.6
Transportation	-1.3	-1.4	-6.2	-6.1	-6.6	-4.4
Medical Care	0.9	1.8	4.9	7.6	8.4	6.6
Entertainment	-0.4	0.7	5.2	3.4	0.2	4.4
Other Goods and Services	2.6	1.3	5.0	6.3	8.0	3.4

*Not seasonally adjusted

Source: Metropolitan Phoenix data compiled by the Center for Business Research, College of Business, Arizona State University, in cosponsorship with Valley National Bank; other data are from the U.S. Department of Labor, Bureau of Labor Statistics.

Medical Care

Lower health insurance premiums held the advance in the medical care index to just 0.2 percent. After years of rising at double-digit annual rates, leading all categories of the CPI, medical care costs increased only 4.9 percent during the year ending third quarter 1986.

While most of the other medical care subcategories rose moderately during the third quarter, hospital costs climbed 3.1 percent, the most in more than two years.

Other Categories

Apparel costs continued their seesaw pattern, dropping 2.5 percent after a large second quarter gain. A nearly 8 percent jump in the prices of toilet goods and personal care appliances caused inflation to accelerate in the other goods and services category. Entertainment costs dropped slightly due to price declines in reading materials and in toys and hobbies.

COMPARISON AREAS

The second quarter inflation rate in the Phoenix area was nearly identical to the national average (see Table 3). In each major category except other goods and services, the advance in the Valley was comparable to, or smaller than, the national average.

Compared to one year earlier, the Phoenix inflation rate was less than the national average and the San Diego rate but greater than the deflation in Denver. The largest disparity between the Phoenix area and the national average was in the medical care category, due to a greater moderation in the Phoenix rate.

OUTLOOK

The forecast presented last quarter remains virtually unchanged. As predicted, the overall inflation rate was again modest during the third quarter, with further deflation in transportation and little gain in medical care costs.

Beginning in the fourth quarter, however, a gradual acceleration in the inflation rate remains likely. Deflation in the transportation category should end, adding at least 0.2 percentage points to the quarterly inflation rate. Medical care inflation should also accelerate but may be negated by a drop-off in food prices from their third quarter spike.

For 1987, an annual average rate of 4 percent is likely for the Metropolitan Phoenix CPI.

– Tom R. Rex
Research Manager

Arizona Births Outnumber Deaths by 30,000

Arizona's rate of net natural population increase – the number by which births outnumber deaths – has hovered near 1 percent since 1975. During the 1980s, approximately 30,000 more births than deaths have been recorded annually. This number constitutes 28 percent of the state's total population gain during that period, with migration accounting for the balance.

In 1984 (the last year for which complete data are available), births to Arizona residents numbered 55,109, more than twice the number of deaths (23,785). While births have steadily risen with the population, the birth rate – 18.0 per 1,000 residents in 1984 – has varied only slightly (see Figure I). The mortality rate – 7.8 per 1,000 residents in 1984 – has fluctuated even less.

Compared to 30 years ago, however, birth rates have declined sharply, down approximately 40 percent from peak values reached during the 1950s baby boom. Mortality rates have fallen only slightly during this period.

Birth rates vary widely by Arizona county. In 1984, the highest rate (35), in Apache County, was nearly double the state's rate. Navajo County's rate (26) was next highest. The lowest rate (12) occurred in Yavapai County, with low rates also experienced in Mohave and La Paz counties. The geographic variation in the mortality rate was not as great, ranging from 12 per 1,000 residents in Yavapai County to 4 per 1,000 residents in Coconino County.

The net natural increase, expressed as a rate, was highest in Apache and Navajo counties, which have a young population and a high fertility rate. Mohave and Yavapai counties, home to many senior citizens, have the lowest rates of net natural increase. Births in Yavapai County barely outnumbered deaths in 1984.

A daily average of 151 babies were born to Arizona residents during 1984; deaths averaged 65 per day. This net natural increase peaks in the summer and early fall.

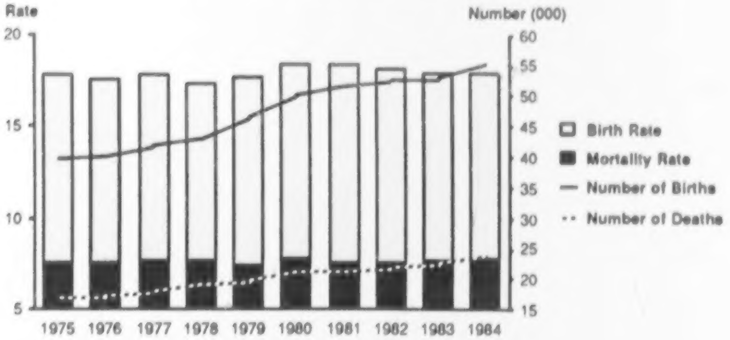
PROJECTIONS

Population projections released by the Arizona Department of Economic Security are for a net natural increase after 1990 that will be slightly less than the current level of 31,000 per year. Since the population will continue to grow rapidly, the growth rate from net natural increase will be halved by the end of the century, to just 0.5 percent per year.

This decline will result primarily from a falling birth rate, from 18 in 1984 to approximately 13 by the late 1980s, as the baby-boom generation ages out of the prime childbearing years. The mortality rate probably will remain nearly stable until the 21st century, when it will begin to creep up as the population ages.

– Tom R. Rex
Research Manager

FIGURE I
BIRTHS AND DEATHS, 1975-84
Number and Rate Per 1,000 Population



Source: Arizona Department of Health Services

September Purchasing Indicators Poise for Fourth Quarter Gain

In September, the Arizona economy showed signs of shaking off the hangover it experienced over the summer months. Lead times on shipments from vendors, new orders received, and production all registered upticks over August's anemic performance). The economy gave off conflicting signals, however, as inventory levels and employment both declined slightly. While the increases were not that strong, they may be the first signs that the economy is poised for a stronger upturn in the final quarter of the year.

The summer months were slow, as the economy went well into its fourth year of growth. It appeared that it might downshift even further and move into a minor slump. However, the Federal Reserve's reduction of interest rates, coupled with relatively stable prices, appear to have forestalled the danger of a downturn. The slight pickup in the growth rate in September should continue over the fourth quarter, and 1986 should close on an upbeat note. The effects of the tax bill are uncertain, but the factors that typically cause a downturn – high inflation and interest rates – are absent, which should permit Arizona's economic tempo to pick up somewhat.

Table 1 presents the results of the September survey of Arizona purchasing managers. Analysis of these results follows.

Prices paid for purchased items rose in September at the same rate as in August. The price increase rate in each of the preceding four months (beginning in June) was somewhat higher than in the first five months of the year and substantially larger than in almost any month of 1985. Yet the increase rate is well-contained compared to the first two years (1983 and 1984) of the current expansion. This relatively stable price picture is conducive to further economic growth.

Delivery time on shipments from vendors continued to lengthen, for the 12th consecutive month. The September stretch-out was twice as great as in August. While the lead time increases have been moderate through 1986, vendor order backlogs appear to be growing.

Inventory levels of purchased materials were unchanged in September, marking the sixth straight month of stable stocks. While inventory growth is not contributing to a continuation of the expansion, no inventory overhang threatens to swamp the economy.

New orders booked by Arizona firms enjoyed a good uptick in September. The increase rate was twice as large as in August and the highest since April. This marks the 45th consecutive monthly increase; the strength shown in September may be signaling a pickup in the growth tempo.

Production also jumped in September, mirroring the new order hike. This month-to-month increase was the largest since April.

Employment dropped slightly, bringing to a halt a string of 20 monthly advances. This was surprising, for employment normally would increase as needed to support the higher new order and production rates. Evidently, Arizona firms are exercising caution in their payroll expenditures.

Purchases of materials and supplies by Arizona firms increased in September at a higher rate than in August. The gain was the largest since May and was needed to meet the higher production rates.

– **Harold Fearon**

Dr. Fearon is the National Association of Purchasing Management Professor in the ASU College of Business.

Arizona Purchasing Survey

Now in its 25th year of monthly reporting, Dr. Harold Fearon's survey of Arizona business conditions utilizes data from a questionnaire sent to members of the purchasing management associations of Arizona and southern Arizona. It asks them to indicate the direction of activity - higher, unchanged, or lower - of seven key measures of economic activity in the month just ended. These purchasing managers deal daily with supply, demand, and price factors in the marketplace; their aggregate readings have accurately charted the state's economic course for two decades, providing timely data on turning points.

TABLE 1
SEPTEMBER PURCHASING SURVEY

	Percent of Purchasing Managers Indicating Each Response (September compared to August)		
Key Indicators	*Higher*	*Same*	*Lower*
Prices paid for major commodities	24	70	6
Delivery time from vendors	22	68	10
Purchased materials inventory level	24	51	25
New orders received	41	38	21
Production	36	47	17
Employment	16	66	18
Purchases	37	41	22

Source: Purchasing Management Association of Arizona and the Purchasing Management Association of Southern Arizona.

Arizona Leading Index Advances Further in August

After rising sharply in July, the Arizona Index of Leading Economic Indicators climbed an additional 0.3 percent in August, bringing the index to a new high of 109.7 (see Figure I). August's gain was the sixth in the last seven months. The cumulative increase during this period was the greatest since the initial recovery from the 1981-82 recession.

The diffusion index – the percentage of rising components – registered 55 percent in August after a first-time-ever reading of 100 percent in July. As has been typical in recent months, only a couple of components contributed significantly to the index's advance.

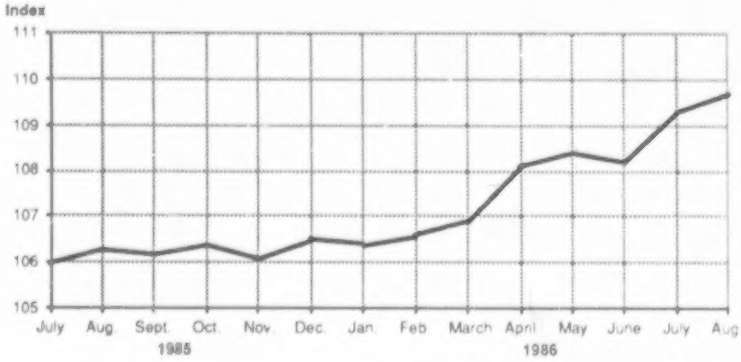
As seen in Table I, the contribution of the national money supply (M2) in August was greater than the net gain in the index. In each of the last seven months, the money supply provided the largest contribution. Its annualized increase of approximately 11 percent during this period has added to inflationary worries expressed in the financial markets.

Initial unemployment insurance claims yielded the only other sizable contribution in August. Claims declined (a positive indicator) for the fifth straight month.

The change in sensitive materials prices was the largest negative impact on the August index. The decline, following three months of moderate gains, was the largest since mid-1981, suggesting that an acceleration in inflation is not imminent.

None of the other components changed by more than a slight amount in August. The net effect of the five components derived from a survey of Arizona purchasing managers was nil.

FIGURE I
ARIZONA INDEX OF LEADING ECONOMIC INDICATORS



Source: Center for Business Research, College of Business, Arizona State University

TABLE 1
NET CONTRIBUTION OF INDIVIDUAL COMPONENTS TO THE ARIZONA INDEX OF LEADING ECONOMIC INDICATORS

	Net Contribution⁺			
	May	*June*	*July*	*Aug.*
Delivery Time*	-.01	-.09	.04	-.02
Inventory Levels*	-.04	-.01	.01	.04
New Orders*	.03	-.12	.04	-.04
Production*	-.12	-.03	.07	.04
Employment*	.02	-.06	.03	.00
Residential Building Permits	.09	-.24	.24	.04
Unemployment Insurance Claims	.03	.06	.01	.12
Average Workweek, Manufacturing	-.14	.02	.05	-.05
Money Supply	.40	.15	.47	.34
Change in Sensitive Materials Prices	.08	.12	.06	-.16
OVERALL INDEX	.33	-.19	1.02	.31

⁺The net contribution of each component is calculated by multiplying the monthly percent change in its index by its relative importance.

*Based on indicators from the purchasing management associations of Arizona and southern Arizona.

Source: Center for Business Research, College of Business, Arizona State University

OUTLOOK

Although the index's vigorous advance during the February-to-August period was caused primarily by the surge in money supply, slight gains elsewhere, including the reduction in the number of unemployment insurance claims, suggest that Arizona economic performance should begin to improve during late 1986. The chance of a recession beginning before spring 1987 remains less than 1 percent.

Gains in the Arizona leading index suggest acceleration in Arizona economic activity at a time when the national leading index is signaling further slow growth in the national economy. During most of 1985, the opposite was true: The national index indicated faster growth (that never developed), while the Arizona index signaled a continuation of moderate expansion.

– Tom R. Rex
Research Manager

ARIZONA ECONOMIC INDICATORS

	Month or Quarter	*Value*	*Percent Change from Previous Period*	*Percent Change from Year Ago*	**Year-to-Date** *Value*	**Year-to-Date** *Percent Change from Year Ago*
GROSS STATE PRODUCT (In Billions of Dollars, at Annual Rate)						
Arizona - Current Dollars	1st Qtr.	49.913	3.9	9.2	NA	NA
Arizona - 1982 Dollars	1st Qtr.	45.741	3.1	6.9	NA	NA
CONSUMER PRICE INDEX (1977 = 100)						
Metropolitan Phoenix	3rd Qtr.	193.7	0.6	1.2	NA	NA
INDEX OF LEADING ECONOMIC INDICATORS (1977 = 100)						
Arizona	August	109.7	0.4	3.2	NA	NA
BUILDING PERMITS (Total Dollar Value in Thousands)						
Maricopa County	July	362,773	23	-12	2,478,072	-2
Pima County	July	63,398	-28	-15	531,276	10
Balance of State	July	83,630	105	37	380,925	-4
Arizona	July	509,801	20	-7	3,390,273	0
TOTAL HOUSING UNITS AUTHORIZED						
Maricopa County	July	3,339	0	-16	29,845	-9
Pima County	July	1,253	-22	63	7,586	-1
Balance of State	July	1,259	50	2	7,446	-27
Arizona	July	5,851	1	-2	44,877	-12
HOME SALES						
Maricopa County - Number	August	6,112	14	28	39,911	9
Maricopa County - Median Price	August	79,000	0.4	3.9	77,200	5.5
HOUSING AFFORDABILITY INDEXES						
Metropolitan Phoenix - New Homes	2nd Qtr.	92	3.4	13.6	NA	NA
Metropolitan Phoenix - Resale Homes	2nd Qtr.	105	1.0	16.7	NA	NA
MORTGAGE INTEREST RATES (Conventional, 30-year, Fixed-rate)						
Maricopa County	Sept.	9.9	-1.0	-18.2	NA	NA
POPULATION ESTIMATES (In Thousands)						
Maricopa County	2nd Qtr.	1,902	1.1	4.9	NA	NA
Arizona	2nd Qtr.	3,380	1.0	4.5	NA	NA
ELECTRICAL POWER SALES (In Millions of Kilowatt Hours)						
Arizona	August	4,153	9.8	6.3	24,948	1.0

NA = Not Applicable

Source: Center for Business Research, College of Business, Arizona State University

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Migration Patterns Stabilize During '80s

During 1983-84 (the latest year for which data are available), national migration flows generally continued to follow the pattern of the early 1980s, providing additional evidence that migration streams during the mid-to-late 1970s were aberrations in the long-term trend.

This article updates information presented in the February 1986 *Arizona Business* (page 3) and extends the analysis into other migration topics. The data, primarily from the Internal Revenue Service (IRS), do not represent complete counts of all migrants but are useful in making geographical and temporal comparisons.

Migration can be measured in a variety of ways; each is examined in this article. "Net migration," the most frequently used, is the difference between in-migration and out-migration. "Migration efficiency" is the ratio of in-migration to out-migration. An efficiency of 100 indicates an equal number of in- and out-migrants; the higher the value, the more in-migration exceeds out-migration. The only figures presented in this article are migration efficiencies because the incompleteness of the IRS data results in underestimates in each of the other migration measures.

Sometimes, in-migration and out-migration are added together – "gross migration" refers to the total flow of people in both directions. Finally, migration rates can be deter-

See "Migration," page 2

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GSP Growth Remains Vigorous in 2nd Quarter

The Arizona Gross State Product (GSP) expanded a moderately strong 7.0 percent (inflation-adjusted and annualized) during second quarter 1986, slower than the first quarter growth rate. However, adjusted GSP, which excludes the volatile agriculture and mining industries, rose at a much faster 11.4 percent, comparable to the rates of the two prior quarters (see Table 1).

As indicated by the unusually large difference between the growth of real GSP and its adjusted measure, the gross products of both agriculture and mining dropped sharply during the second quarter. These valuations are subject to considerable revision, however, primarily from changes in personal income estimates. All other sectors except transportation, communication and public utilities (TCPU) experienced growth in their gross products. Once again, the finance, insurance and real estate (FIRE) sector expanded most rapidly.

The expansion of Arizona's economy continued to outdistance

See "GSP," page 6

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"Migration," from page 1

mined by dividing flows by population to adjust for the effect of a heavily populated state; for example, New York provides a large number of migrants to all states simply because of its size. To determine the rate of in-migration to Arizona from New York, that flow is divided by New York's population.

DEMOGRAPHICS AND DYNAMICS

Research on national and international migration has yielded several relationships that are obvious in Arizona's migration flows. A disproportionate number of migrants are young, well-educated professionals (see page one, July 1985 *Arizona Business* and page one, February 1986 *Arizona Business*). These people change residence primarily for work-related and economic reasons, though quality-of-life factors, such as climate, also play a role.

Migrants generally are "pulled" to an area by factors such as availability of jobs, rather than "pushed" from their old residence by poor economic conditions. Since many migrants move more than once, an area with high in-migration usually also experiences relatively heavy out-migration; this is true of Arizona. Further, a relatively large counterstream usually develops, even with areas that provide considerable in-migration, as in the case of Arizona and Illinois.

Once established, a migration flow frequently will last for decades unless broken by a sharp change in economic conditions. One reason for the continuity is the information that travels between friends and relatives who have moved and those who have not. Further, in-migration and employment growth perpetuate each other.

In choosing a new residence, people are likely to move to the nearest location that satisfies their needs. Thus, Arizona's in-migrants disproportionately come from the West and Midwest; people in the Mideast and Northeast more frequently move to the Southeast.

This concept of "intervening opportunities" may explain Arizona's record net in-migration between 1984 and 1986. With booming economies, Texas and Oklahoma, both closer to the Midwest and East, attracted huge numbers of migrants between the early 1970s and early 1980s. However, economic problems in the oil-producing states since 1983 may have forced some people to travel further, to Arizona, to meet their needs.

Not all migrants fall into the category of young people moving for economic reasons. While the middle-aged population moves relatively infrequently, the incidence of migration rises somewhat at retirement. Unlike the repeatedly moving young, for whom Arizona frequently is a temporary stop, retirees generally move just once, and a counterstream does not develop.

NATIONAL MIGRATION PATTERNS

Ever since European settlement, North America has experienced east-to-west migration. North-to-south movement has become more common in recent decades. Within these consistent long-term patterns, migration involving smaller regions has varied with changing economic conditions.

The Northwest, for example, attracted many migrants during the mid-to-late 1970s. This region has suffered net out-migration during the 1980s. In contrast, while still experiencing net out-migration, the Northeast has not lost nearly as many people during the 1980s as in the mid-to-late 1970s. While exaggerated by the Eastern press, an economic rebound has occurred in the Northeast.

Between the early 1970s and early 1980s, the oil-producing states in the West South Central region grew rapidly. In 1983-84, however, Louisiana and Oklahoma experienced net out-migration. The situation in that region is far worse in 1986.

Net out-migration has characterized the Midwest for years. The flows have hardly changed during the 1980s, except that some of the farm-dependent states have more outflow than ever. The migration experiences of various regions are illustrated in Figure I.

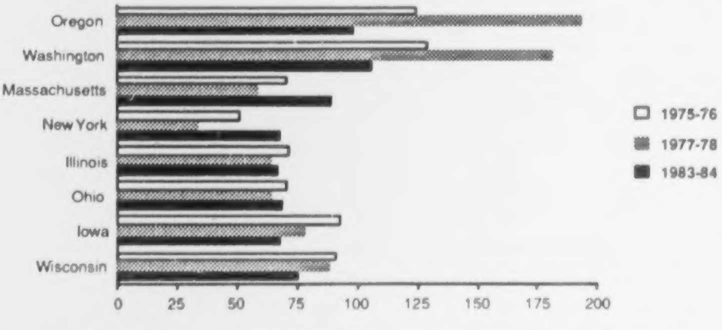
ARIZONA MIGRATION

This section utilizes 1970-84 IRS data to analyze Arizona's migration flows derived from each of the measures defined in the introduction.

In-Migration

More people moved to Arizona in 1983-84 than to all but eight other states. Since the late 1970s, Arizona consistently has ranked between eighth and tenth in the number of in-migrants. Each state with greater in-migration has a larger resident population than Arizona: Florida, Texas, California, Virginia, Georgia, New York and Illinois.

FIGURE I
TOTAL MIGRATION EFFICIENCY
Selected States



Source: Center for Business Research, College of Business, Arizona State University; from Internal Revenue Service data.

The number of people moving to Arizona varies with the economic cycle, and the flow during the 1982 recession constituted 80 percent of the 1978-79 peak. (This peak was exceeded after 1983-84). While migration in general is cyclical, it is more apparent in states with rapidly growing populations such as Arizona and Florida.

States providing the greatest number of Arizona's in-migrants during 1983-84 were located either in the West or near the Great Lakes. Eighteen percent of in-migrants were from California, far more than from New Mexico or Illinois, the next largest contributors, each with 7 percent. The smallest number of in-migrants came from small Northeastern states and from Southern states such as Mississippi and Alabama.

Continuing the trend of the 1980s, the 1983-84 proportion of migrants from Michigan, Ohio and New Jersey declined, each reaching the lowest level since IRS data became available. In contrast, the proportions from three of Arizona's neighboring states, Colorado, Utah and New Mexico, reached their highest levels.

Expressed as a rate, migration to Arizona usually is dominated by small states in the West, led by New Mexico. States in the East and South have the lowest rates (Alabama, Delaware, South Carolina and West Virginia).

Out-Migration

Since the early 1970s, Arizona consistently has ranked 19th or 20th in the nation for number of people leaving the state. Arizona's resident population ranking is 27th, meaning that a relatively large number of people leave the state each year.

Out-migration has varied less than 10 percent between peak and trough years. In 1983-84, California was the destination of 22 percent of those who left Arizona. Twelve percent moved to New Mexico and 9 percent to Texas; other common destination states included Florida, Illinois and Michigan. The smallest number of people went to small states in the Northeast.

Compared to 1982-83, the proportion of out-migrants to New Mexico, Georgia and Michigan increased, reaching peaks in each case. Out-migration to the oil-dependent states - Texas, Oklahoma and Colorado - declined.

As a rate, the greatest out-migration was to other Western states, led by New Mexico and Nevada. The lowest rates again were with Eastern and Southern states.

Gross Migration

Arizona has ranked 14th in total migration in both directions throughout the 1980s. Except for a dip during the 1982 recession, the number has been relatively stable since the late 1970s.

The greatest migration occurs with Western and large Midwestern states. Flows have declined with certain Midwestern states but have increased with several Western states, particularly Utah and New Mexico.

Migration to and from New York accounted for 3 percent of Arizona's gross migration in 1983-84, ranking New York's rate ninth highest. After adjusting for population, however, their rate dropped to 10th lowest.

Net Migration

When the net number of in-migrants is measured, Arizona ranks between second and ninth highest, the peak rank having occurred in the early 1970s and the low during the 1975 recession. Arizona placed fifth in 1983-84, behind Florida, Texas, California and Georgia. Except for Florida and Texas, which have experienced greater net in-migration every year since the early 1970s, the states ranking higher than Arizona have alternated.

Mostly because of fluctuations in in-migration, Arizona's net migration has varied widely with the economic cycle. According to the incomplete IRS data, net migration during 1975-76 was only 25 percent that of 1978-79, though the Center's population estimates do not assume a range quite that large.

Net in-migration to Arizona generally is greatest from northern states in the West and Midwest. In 1983-84, net in-migration from Illinois was nearly twice as great as that from the next-highest-ranked states (Michigan, Ohio and California). Several other states reached highs: Colorado, Idaho, Utah, Wyoming, Iowa and Illinois.

Arizona usually experiences net out-migration to only a handful of states in any year; the numbers generally are small and persist for only one or two years. However, Arizona normally suffers net out-migration to New Mexico, Nevada and Alaska; between the early 1970s and early 1980s, the oil-producing states commonly were included on this list. During 1983-84, Georgia, South Carolina and Virginia also received more Arizonans than vice-versa.

When migration is expressed as a rate, states in the Northwest and Midwest, including Wyoming, Utah, Colorado, South Dakota and Nebraska, contributed the greatest net migration to Arizona in 1983-84. The lowest rates, some negative, were with Southern and neighboring states, led by New Mexico.

Efficiency

The total effectiveness of Arizona's migration has ranged between 130 and 157 since the mid-1970s, usually placing it between the second and fourth highest in the nation. The efficiencies are cyclical, with the peak reached in 1978-79 and the low point in 1982-83.

Florida's total efficiency consistently has been higher than Arizona's, while those for Texas, Alaska and Nevada sometimes have been higher. In 1983-84, Arizona's maximum efficiencies with individual states were with those in the Midwest (see Figure II). The ranking of the lowest individual efficiency is nearly identical to the ranking of the lowest net migration.

Many state efficiencies rose during 1983-84, particularly in the West and West South Central regions. In contrast, efficiencies declined with other states, particularly those in New England.

COMPARISON TO COMPETITORS

With the nation's dominant migration flows away from the Northeast and Midwest and toward the Southeast, Southwest and West, Arizona "competes" with several states for migrants. Since the mid-1970s, the primary rivals have been Florida, Texas and California. Other states that have done well for briefer periods include Georgia, Oklahoma, Colorado and Nevada.

This section reviews the basic migration patterns to and from each of Arizona's major competitors (see Figure III).

California

During the 1970s, California experienced little net in-migration. Although the state attracted huge numbers of in-migrants, more than any other state, large numbers of people left, particularly for other Western states. During the 1980s, the number of in-migrants to California fell slightly, but out-migration dropped more precipitously. Net in-migration since 1981 has exceeded Arizona's, though California has a lower total efficiency.

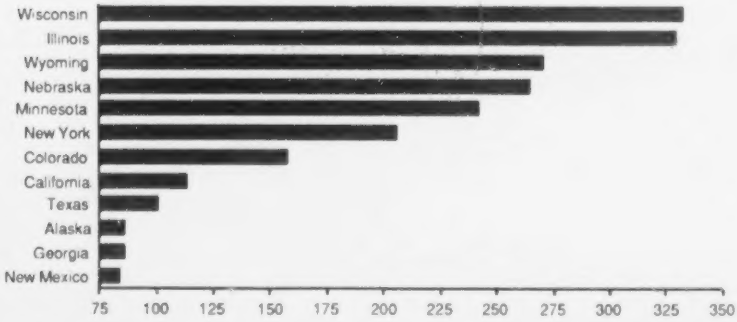
The regional pattern of migration to and from California is nearly identical to that of Arizona. Thus, the two states are direct competitors.

Colorado

Through the 1970s, Colorado's net migration and total efficiency each was similar to that of Arizona, though slightly lower. Migration surged during the 1981-82 energy boom but subsequently crashed; net in-migration was minimal in 1983-84 as in-migration declined.

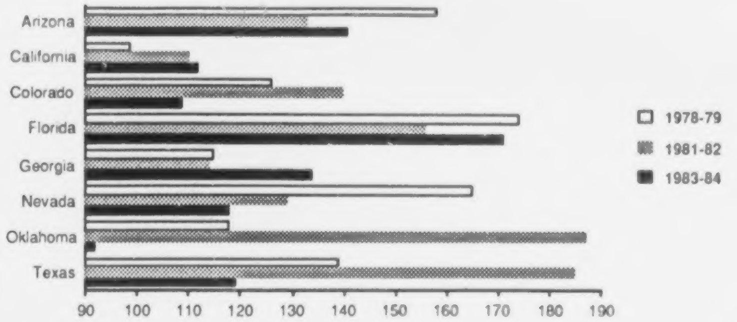
Until the slump in the energy industry, the regional pattern of migration to and from Colorado was similar to that of Arizona, except that Colorado did better against its neighboring states, such as Nebraska.

FIGURE II
EFFICIENCY OF ARIZONA MIGRATION
With Selected States, 1983-84



Source: Center for Business Research, College of Business, Arizona State University, from Internal Revenue Service data.

FIGURE III
TOTAL MIGRATION EFFICIENCY
States With Large Net In-Migration



Source: Center for Business Research, College of Business, Arizona State University; from Internal Revenue Service data.

Florida

Since the mid-1970s, Florida's total efficiency consistently has exceeded Arizona's by 20 to 30 points; it frequently has been the highest in the nation. Its attraction of retirees may be a factor in its effectiveness. Net in-migration has been approximately four times as great as to Arizona; Florida has ranked first nearly every year. In-migration increased during the late 1970s and since has held steady. Out-migration has remained constant.

While some overlap exists, the geographical sources of Florida's migrants are different from those of Arizona. Florida draws more heavily from the East Coast and Mideast, while Arizona attracts more Midwesterners. Indiana is the dividing line. Florida's four-times-as-many migrants can be explained partially by the twice-as-great population northeast of Indiana than in the northern tier of states west of Indiana.

Georgia

Georgia's total efficiency and net migration surged after 1981. While its efficiency remains 5 to 10 points below that of Arizona, its net in-migration between 1982 and 1984 was identical. Both an increase in in-migration and a decrease in out-migration contributed to the improvement.

The sources of migrants to Georgia are similar to those for Florida.

Nevada

Through the middle and late 1970s, the total efficiency of migration to Nevada was higher than that to Arizona. However, Nevada's efficiency declined during the 1980s, dropping to 20 points less than Arizona's. Net migration always was less than that for Arizona, but it dropped to barely positive after

1982. Changes in both in-migration and out-migration during the 1980s contributed to the deterioration, which can be traced to Nevada's dependence on the slumping gambling industry.

The geographical pattern of migration to and from Nevada and Arizona is similar, except that Nevada has attracted more people living in certain southern states, including Georgia, Louisiana and New Mexico.

Oklahoma

Until the oil boom in 1981-82, Oklahoma's total migration efficiency was similar to, or somewhat less than, Arizona's efficiency. After surging to 186 in 1981-82, the highest in the nation, Oklahoma's efficiency fell to less than 100 by 1983-84. Similarly, Oklahoma's net in-migration usually was less than Arizona's; the only exceptions were in 1981-82 and during the 1975 recession. Oklahoma's varying fortunes during the 1980s have resulted mostly from fluctuations in in-migration, though out-migration did increase after 1982.

The regional pattern of migration to and from Oklahoma is not too dissimilar from that to and from Arizona, except that Oklahoma's efficiencies with the Northwest are lower.

Texas

Between the early 1970s and 1983, the total effectiveness of Texas' migration exceeded that of Arizona's migration. But after jumping to 184 in 1981-82, Texas' efficiency fell to less than 120 in 1983-84, closer to the experience of the early 1970s (prior to the first oil shock).

Net in-migration to Texas has been greater than that to Arizona since the early 1970s. However, after generally exceeding Arizona's number by three or four times, the difference in 1983-84 was relatively slight.

In terms of regional migration patterns, Texas does much better against Southern states but worse against Northwestern states, in comparison to Arizona.

SUMMARY

The number of people who leave Arizona is relatively consistent from year to year, but the number who move to Arizona varies with the economic cycle. During recessions, which can be relatively severe in Arizona, the economic "pull" of the state is temporarily minimized. As a result, net in-migration and total migration efficiency each is lower during recessions. Other than this economic cyclicality, total migration to and from Arizona hardly varied during the 1970s and early 1980s.

Arizona's strongest migration flows occur to and from states in the West and Midwest. After adjusting for differences in population size among other states, migration rates are highest with states in the Northwest and Northern Plains.

Several states in the South, from Florida to California, are prime destination states for migrants. Since distance is a major factor in many migrants' determination of where to move, Arizona directly "competes" for migrants with other Southwestern states but not with Southeastern states.

Many population projections assume that the current record level of employment-related net in-migration to Arizona will continue indefinitely. Yet the supply of potential migrants will steadily decline as the baby-boom generation ages out of the prime migratory years. These optimistic population projections will not be attained unless some or all of the following changes occur:

- Arizona attracts a greater proportion of those people from the West and Midwest who will migrate to the Southwest.
- More residents of the Mideast and Northeast move to the Southwest instead of to the Southeast.
- The U.S. population becomes more mobile.
- Arizona's economy avoids downturns.

– Tom R. Rex
Research Manager

'86 Index Available

An index to the 1986 issues of *Arizona Business* is available on request from the Center for Business Research by calling (602) 965-3961.

"GSP," from page 1

national growth by a greater-than-normal margin, measured by either adjusted or unadjusted real GSP. Economic gains in Arizona remain well above the long-term average, largely due to rapid population increases, while growth nationally fails to reach its long-term norm.

REVISIONS

The GSP again was revised, back to 1980, primarily because the U.S. Bureau of Economic Analysis issued new, benchmarked personal income estimates. The revisions boosted growth during 1981, 1982 and 1985 but lowered it in 1983.

As predicted, 1985 personal income data were revised up. Consequently, real GSP growth during 1985 reached 8.5 percent, compared to the 7.6 percent previously reported. Adjusted GSP expanded even faster, at a 9.7 percent rate, up from 8.5 percent. Growth was significantly greater in the first and fourth quarters than previously reported.

OUTLOOK

Arizona's GSP continues to outperform not only GNP but also the Center's expectations. With the revisions incorporated in the second quarter, it now appears that annual average GSP growth during 1986 may match the rapid rate recorded in 1985. Second quarter 1986 GSP was 9.6 percent higher than second quarter 1985 GSP.

While some modest slowing is still foreseen for 1987, annual growth could substantially exceed the 6 percent rate predicted in the last economic forecast issued by the Center. If so, 1987 would be the fifth consecutive year of superlative economic expansion, the longest unbroken string of above-average growth since GSP measurement began in 1960.

– **Tom R. Rex**
Research Manager

TABLE 1
ECONOMIC GROWTH

	Arizona Gross State Product[r]				**Gross National Product**
Quarter	*Billions of Current Dollars, Annualized*	*Billions of 1982 Dollars, Annualized*	*Annualized Percent Change (1982 Dollars)*	*Annualized Percent Change (Adjusted GSP)**	*Annualized Percent Change (1982 Dollars)*
First 1984	$41.812	$39.863	13.3%	10.5%	9.5%
Second 1984	42.585	40.356	5.0	10.5	4.9
Third 1984	44.028	41.737	13.7	12.4	2.3
Fourth 1984	44.427	42.050	3.0	3.6	1.5
First 1985	46.581	43.658	15.3	14.6	3.0
Second 1985	46.989	43.849	1.7	5.7	2.3
Third 1985	48.096	44.656	7.4	8.7	4.1
Fourth 1985	48.900	45.730	9.6	10.7	2.1
First 1986	50.890	47.254	13.3	12.4	3.7
Second 1986	51.629	48.084	7.0	11.4	0.6

*The adjusted GSP is the annualized GSP in billions of 1982 dollars, minus the contributions of the agriculture and mining industries.

[r] Revised

Source: Center for Business Research, College of Business, Arizona State University; in cosponsorship with the ASU College of Business Dean's Council of 100.

Year-end Acknowledgments

Monthly publication of a data-based periodical such as *Arizona Business* reflects numerous and diverse behind-the-scenes efforts. As 1986 draws to a close, we would like to acknowledge the contributions of those individuals whose expertise, hard work and dedication have brought our readers current economic/real estate data and analysis over the past year.

Sandra Palais and Peter Luan, computer specialists, provide computer assistance with the many Center for Business Research projects on which we regularly report in *Arizona Business*. Palais also produces the computer-generated graphic figures that appear in each issue. In addition, she provided invaluable problem-solving assistance during the Center's transition to a desktop publishing system.

Nancy Merz, Center Research Assistant, collects and compiles data for the consumer price index, building permits and the Center's database. Graduate Research Assistant Barbara Connell assists in collecting prices for the CPI.

During 1986, the center's administrative, secretarial and clerical staff assisted in numerous ways, including manuscript processing, distribution and bookkeeping for *Arizona Business*. We extend special thanks to Joyce Didia, Sylvia Jackson, and Ruth Ann McClarnon.

Indian Graphics prints *Arizona Business.*

We appreciate all of your efforts!

– **Lee R. McPheters**
Center Director

– **Mary Wery Garcia**
Editor

Minority and Non-Minority-Owned Businesses

Study Reveals Significant Differences

Minority business owners in Maricopa County are much more inclined to establish company goals, policies and procedures than non-minority business owners, according to a fall 1984 study of 423 minority- and non-minority-owned businesses. Non-minority business owners are younger, better educated, and have more business experience than their minority counterparts.

The study identified other key differences in the areas of ownership, personnel management, business practices and clientele.

METHODOLOGY

A questionnaire was mailed to 1,500 firms in Maricopa County, randomly selected from the 6,000-member listings of the Phoenix Metropolitan Chamber of Commerce and the Arizona Hispanic, Black and Chinese-American chambers of commerce. These businesses were asked to identify themselves according to the federal government's "retail trade" Standard Industrial Codes 52-59 and the "manufacturing" and "services" classifications of Valley Bank's 1985 *Arizona Statistical Review*.

Of 465 surveys returned, 423 (91 percent) were usable, 103 of which had been completed by minority firms. Retail service businesses were the most common form of non-minority-owned enterprise (36 percent), while minority-owned-businesses were clustered in the manufacturing category (35 percent).

KEY DIFFERENCES

Ownership

Forty-five percent of the non-minority business owners were less than 46 years old. Almost one-third were college graduates, while an additional 35 percent had some college education. The majority (60 percent) of minority business owners were age 46 years or older, with only 5 percent having obtained a college degree.

The minority owners had less business experience, averaging two years of prior retail business exposure and an additional three years of non-retail work experience. The most striking difference was the average number of years they had been involved in their current business: Non-minority owners averaged 14 years, compared to an average of two years for minority business owners. Not surprisingly, minority business owners generally represented the first generation to own the family business, while non-minority-owned businesses were, on average, into their second and third generation of family succession and/or were separate from the parents' business.

The predominant form of legal ownership for non-minority-owned businesses was the corporation (55 percent), followed by sole proprietorships (31 percent). Minority-owned businesses were most often corporations (45 percent) and sole proprietorships (30 percent); 15 percent were partnerships, considerably higher than the 4 percent of non-minority-owned businesses indicating that form of legal ownership.

Personnel Management

The study also revealed striking differences in the number and management of employees. On average, the non-minority-owned businesses had 10 full-time and five part-time employees. Minority-owned businesses averaged only two full-time and two part-time employees.

A greater number (55 percent) of minority-owned businesses had policy and procedures manuals than did non-minority-owned businesses (25 percent). Asked whether they had established company goals, minority owners responded overwhelmingly in the affirmative (70 percent), compared to only 29 percent of the non-minority owners.

Most non-minority business owners spent an average of 26 percent of their time directly supervising employees, much less than the 60 percent spent by minority business owners. This contrast can be attributed to the predominance of manufacturing firms in the minority-ownership category, while most of the non-minority-owned businesses fell into the retail categories.

Business Practices

Two-thirds of the non-minority business owners reported using computers for business transactions, budget preparation, financial forecasting, invoicing, and inventory controls. This percentage is dramatically more than the 20 percent of minority owners who utilized computers. However, 55 percent of the minority owners were considering the purchase of a personal computer for their business in the near future.

Another difference is that the non-minority-owned businesses were open, on average, 25 hours per week more than the minority-owned businesses. Finally, minority-owned businesses used different media for advertising, concentrating on Hispanic radio and the yellow pages, while non-minority-owned businesses primarily advertised via newspapers, fliers, and radio.

Clientele

A marked difference exists in the gender and age of clientele served. Most clients of minority-owned businesses were male and less than 45 years old. The customers of non-minority-owned businesses were evenly split between men and women, with no age distinction.

A significant difference also exists in the clientele's method of payment. Seventy-five percent of the customers of non-minority-owned businesses paid with a credit card, compared to a much smaller 12 percent of the customers of minority-owned businesses, who preferred to pay with cash.

The amount of time spent daily with customers was 30 percent for non-minority owners and 25 percent for minority owners.

– Louis Olivas

Dr. Olivas is Associate Professor in the ASU Department of General Business.

Housing Affordability Stabilizes in Third Quarter

The affordability index for new homes in the Phoenix metropolitan area remained at 95 during third quarter 1986. The index for resale homes, however, dropped to 106 from the second quarter's 108, after four consecutive quarterly increases. These values reflect small upward revisions in the affordability indexes since late 1984, a result of higher household income estimates (see Figure I and Table 1).

An index at or above 100 indicates that a median-income household is able to qualify for a median-priced home, assuming a 15 percent downpayment on a fixed-rate, conventional, 30-year mortgage and an income qualification factor of 28 percent. During third quarter 1986, a median-income household could afford an $84,225 home – more than the median-priced resale home, $79,150, but less than the median-priced new home, $88,850.

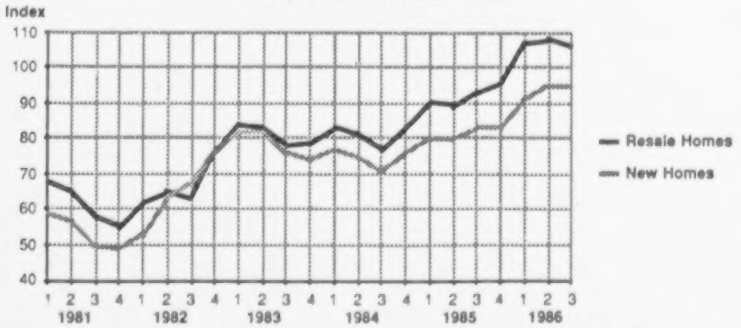
COMPONENT CHANGES

Given a specific financial package, as described above, and assuming that taxes and insurance constitute a constant 15 percent of total housing expenses, only three factors affect housing affordability: household income, home price and effective mortgage interest rate (contract rate plus fees and charges, or "points"). Interest rates rose early in the summer but then fell, making the average effective mortgage rate during the third quarter, 10.7 percent, identical to the second quarter rate.

Resale home prices advanced 2.6 percent, but much of this gain was seasonal (see the article on home sales, page 9). New home prices rose only 1.0 percent.

As a result of stable interest rates and higher prices, the monthly housing payment rose during the third quarter. For resale homes, the gain was greater than that in household income, pushing down the affordability index. Monthly payments on new home mortgages climbed approximately as much as incomes, leaving affordability unchanged.

FIGURE I
HOUSING AFFORDABILITY INDEX
NEW AND RESALE HOMES
Metropolitan Phoenix, 1981-86



Source: Center for Business Research and Arizona Real Estate Center, ASU College of Business

NATIONAL AFFORDABILITY

During the 1980s, housing affordability in the Phoenix area generally has slightly surpassed the national average. New home affordability maintained this relationship during the third quarter, with metropolitan Phoenix's index of 95 exceeding the national average by three percentage points, primarily because the area's housing prices were lower. Resale home affordability was comparable, however, as a decline in prices nationally brought that index up while the Phoenix index fell.

OUTLOOK

Mortgage interest rates likely will remain steady or fluctuate in a narrow range into 1987. Increases in household income should slightly outpace advances in resale home prices, especially during the fourth quarter, when price gains usually are minimal. Thus, resale home affordability should regain, and perhaps surpass, the second quarter level. With new home price increases generally exceeding those of resale homes, further stability in new home affordability is probable.

– **Tom R. Rex**
Research Manager

TABLE 1
HOUSING AFFORDABILITY INDEXES
Metropolitan Phoenix

			Resale Homes			New Homes		
Quarter	*Median Gross Monthly Income*ʳ	*Effective Interest Rate*	*Median Sales Price*	*Monthly Housing Payment*	*Affordability Index*ʳ	*Median Sales Price*	*Monthly Housing Payment*	*Affordability Index*ʳ
1st 1985	$2,580	13.4%	$70,900	$810	90	$79,925	$910	80
2nd 1985	2,620	13.4	72,500	820	89	81,150	920	80
3rd 1985	2,660	12.6	75,000	810	93	83,575	900	83
4th 1985	2,700	12.3	74,650	790	96	86,875	910	83
1st 1986	2,730	11.0	75,000	710	107	88,200	840	91
2nd 1986	2,760	10.7	77,150	720	108	87,950	820	95
3rd 1986	2,800	10.7	79,150	740	106	88,850	830	95

ʳRevised

Source: Center for Business Research and Arizona Real Estate Center, College of Business, Arizona State University. Interest rates are from the Federal Home Loan Bank Board *News.*

Third Quarter Home Sales Topple Prior Records

The number of homes sold in the Phoenix metropolitan area during third quarter 1986 soared approximately 25 percent higher than the number sold in both second quarter 1986 and third quarter 1985 (see Table 1). Compared to the second quarter's prior record, more than 3,800 additional homes were sold during the third quarter.

Similar increases were measured on a seasonally adjusted basis. A new seasonally adjusted record also was set, though the margin was not quite as large.

Falling mortgage interest rates during the spring set the stage for the summer's vigorous sales activity. Because sales are measured as of their date of legal recording (closing date), not the date the purchase agreement is signed (usually at least four weeks earlier), the sales activity reported here lags the change in interest rates by at least two months (see page 8 of the July/August 1986 *Arizona Business*). Following a lull in July, seasonally adjusted home sales surged during the rest of the quarter, peaking at approximately 8,100 units in September, far above June's prior peak of 6,100 units.

Sales of all types of homes rose vigorously during the third quarter. While sales of new homes, in particular, jumped above second quarter levels, new single family home sales were the only type not to set a quarterly record.

Townhouse and condominium sales, especially of existing units, have soared during 1986 from the depressed conditions of 1985. Resale townhouse and condominium sales numbered twice as many in third quarter 1986 as in third quarter 1985.

MEDIAN HOME PRICE AND APPRECIATION RATE

The median price of all homes sold in the Phoenix area during third quarter 1986 jumped 2.4 percent, to $79,500. Seasonal factors were responsible for most of the gain since resale prices, in particular, usually jump during the summer. After seasonal adjustment, the median price rose just 0.4 percent, to a level 6 percent higher than in third quarter 1985. This annual increase was consistent across all housing types except new townhouses and condominiums.

In line with price activity since the 1982 recession, part of the third quarter increase was due not to housing inflation but rather to the increasing size of homes sold. For example, the third quarter 1986 median sales price of resale single family homes was 5.6 percent higher than in third quarter 1985, but the median price per square foot rose only 3.5 percent during this period.

After an annual average increase of just 2 percent during 1985, the annualized gain in the median price per square foot of resale homes quickly climbed to 3.5 percent; it has stabilized at this level. Thus, the acceleration in housing inflation has been modest, with the current rate only slightly higher than that during 1983-84.

The appreciation rate verifies that no significant change in housing inflation occurred; it remained at 0.7 percent, the 14th consecutive quarter in the 0.7 to 0.8 percent range.

OUTLOOK

Mortgage interest rates rose during the early summer but dropped back by late summer. Recorded home sales, then, probably will slow from the record third quarter pace but stay at a relatively high level during the fourth quarter. With stable economic conditions probable into 1987, the Phoenix metropolitan housing market should remain strong; however, it is not likely to equal the peak established during third quarter 1986.

A change in housing inflation from the 3 to 4 percent rate experienced during 1986 is unlikely without accompanying changes in other factors affecting housing affordability. Valley home prices, therefore, probably will rise at approximately the overall inflation rate during 1987.

– Tom R. Rex
Research Manager

TABLE 1
METROPOLITAN PHOENIX HOME SALES

	Single Family			Townhouse/Condominium			Grand
Third Quarter 1986	*Resale*	*New*	*Total*	*Resale*	*New*	*Total*	Total
Median sales price	$79,150	$88,850	$82,000	$65,000	$69,225	$66,750	$79,500
Percent change from:							
Second quarter 1986	2.6	1.0	2.5	0.0	-0.5	0.5	2.4
Third quarter 1985	5.5	6.3	5.6	5.9	4.1	4.3	6.0
Number of sales	12,952	3,098	16,050	2,303	982	3,285	19,335
Percent change from:							
Second quarter 1986	17.8	61.5	24.3	18.0	52.2	26.5	24.7
Third quarter 1985	28.5	-4.0	20.6	106.7	10.0	63.7	26.2

Source: Center for Business Research, College of Business, Arizona State University; from data supplied by Marketron Services, Inc., Phoenix.

October Purchasing Indicators Reflect Step-Up in Growth Tempo

The Arizona economy continued to follow a moderate growth path in October, indicating that the summer doldrums have been overcome and the economy is accelerating again. Price increases were still moderate, and new orders and production advanced. Both purchased inventory levels and employment turned positive in October, an encouraging signal that the growth tempo is stepping up.

Following a slow summer, the economic growth rate began to accelerate in September. Finally, imports are declining and exports are beginning to increase; these factors will have a positive effect on the economic growth rate. While the impact of the new tax bill on business and consumer spending still is uncertain, the Arizona economy will continue to enjoy greater growth in the fourth quarter and will close out the year at a new high level.

Table 1 presents the results of the October survey of Arizona purchasing managers. Analysis of these results follows.

PRICES

Prices paid for purchased items rose in October at a somewhat slower rate than in September and at the slowest rate since May. There are few signs that prices will begin to increase at a faster rate. Moderate inflation continues, aided by the ongoing softness in crude oil and raw material prices, which adds stability to the economy.

DELIVERY TIME

Delivery time on shipments from vendors stretched again, at a somewhat greater rate than in September. Progressively expanding, the lead time increase was the largest in five months, an indication that overall business activity still is enjoying moderate acceleration.

INVENTORY LEVELS

Inventory levels of purchased materials went up, following September's slight drop. The October inventory increase was the largest since March and followed six months in which inventories either declined slightly or were unchanged. This addition to inventory signals greater activity and could give the economy a big lift if it continues over the next several months. The steady new order hikes require higher output levels, necessitating higher inventories.

NEW ORDERS

New orders booked by Arizona firms again increased nicely in October, following the upturn in incoming business that became evident in September. Both the September and October advances were the largest since the first quarter.

PRODUCTION

Production also accelerated in October but at a somewhat slower rate than in September and at the slowest rate since July. While production has increased during each month of 1986, it now should begin to climb at a faster rate to accommodate the higher order bookings.

EMPLOYMENT

Employment rose, following September's slight drop. With the exception of September, employment has grown during each month of 1986.

PURCHASES

Purchases of materials and supplies by Arizona firms increased again in October in order to meet the higher output levels and the additions to inventory.

– Harold Fearon

Dr. Fearon is the National Association of Purchasing Management Professor in the ASU College of Business.

Arizona Purchasing Survey

Now in its 25th year of monthly reporting, Dr. Harold Fearon's survey of Arizona business conditions utilizes data from a questionnaire sent to members of the purchasing management associations of Arizona and southern Arizona. It asks them to indicate the direction of activity - higher, unchanged, or lower - of seven key measures of economic activity in the month just ended. These purchasing managers deal daily with supply, demand, and price factors in the marketplace; their aggregate readings have accurately charted the state's economic course for two decades, providing timely data on turning points.

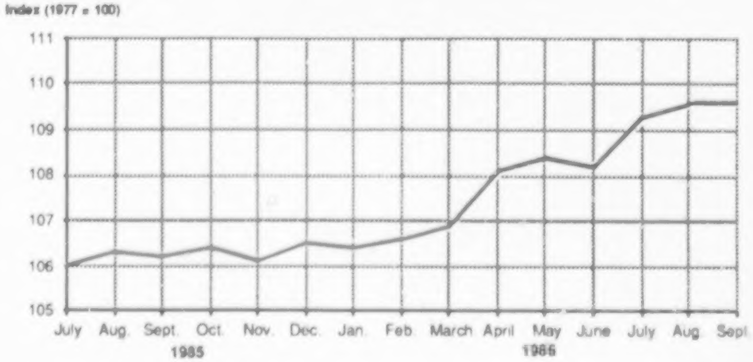
TABLE 1
OCTOBER PURCHASING SURVEY

	Percent of Purchasing Managers Indicating Each Response (October compared to September)		
Key Indicators	*Higher*	*Same*	*Lower*
Prices paid for major commodities	23	69	8
Delivery time from vendors	23	69	8
Purchased materials inventory level	35	38	27
New orders received	44	31	25
Production	36	41	23
Employment	18	71	11
Purchases	38	36	26

Source: Purchasing Management Association of Arizona and the Purchasing Management Association of Southern Arizona

Arizona Leading Index Flat in September

FIGURE I
ARIZONA INDEX OF LEADING ECONOMIC INDICATORS



Source: Center for Business Research, College of Business, Arizona State University

TABLE 1
NET CONTRIBUTION OF INDIVIDUAL COMPONENTS TO THE ARIZONA INDEX OF LEADING ECONOMIC INDICATORS

	Net Contribution+			
	June	*July*	*Aug.*	*Sept.*
Delivery Time*	-.09	.04	-.02	-.02
Inventory Levels*	-.01	.01	.04	-.04
New Orders*	-.12	.04	-.04	.09
Production*	-.03	.07	.04	.00
Employment*	-.06	.03	.00	-.11
Residential Building Permits	-.24	.18^{r}	.02^{r}	.17
Unemployment Insurance Claims	.06	.01	.12	-.12
Average Workweek, Manufacturing	.02	.05	-.05	.00
Money Supply	.15	.47	.35^{r}	.13
Change in Sensitive Materials Prices	.12	.06	-.16	-.09
OVERALL INDEX	-.19	.96^{r}	.30^{r}	.02

^{r}Revised

+The net contribution of each component is calculated by multiplying the monthly percent change in its index by its relative importance.

*Based on indicators from the purchasing management associations of Arizona and southern Arizona.

Source: Center for Business Research, College of Business, Arizona State University.

The Arizona Index of Leading Economic Indicators was unchanged in September, after rising in six of the seven prior months. The index value of 109.6 was the same as the revised value for August (see Figure I).

Only three components rose in September (see Table 1). Residential building permits climbed for the third straight month and for the seventh time during 1986. The September level matched the cyclical peak attained in July 1985. The national money supply (M2) advanced for the eighth consecutive month, but September's gain was the smallest during this period.

While the new orders component increased, the other indicators derived from a survey of Arizona purchasing managers fell. Each of these components stayed well below its cyclical peak, reached in late 1983 or early 1984. Though fluctuating from month to month, these indicators have shown no direction during the last 12 months.

After five straight monthly declines, the number of initial unemployment insurance claims rose in September (a negative indicator). The number of claims in recent months have remained higher than in 1984, when they reached their cyclical low.

The change in sensitive materials prices was negative for the second straight month, completely wiping out its gains of early summer. This component also has been directionless since 1984; it peaked in early 1983. No sign of a resurgence in inflation is reflected in this indicator.

OUTLOOK

Despite the lack of increase in the leading index, the chance of a recession beginning in Arizona before mid-1987 is just 2 percent. At no point during this long economic expansion, now into its fifth year, has the probability of an economic downturn reached even 10 percent.

Instead, the leading index signals a continuation of the economic conditions that have prevailed since mid-1984. While economic growth should accelerate during the fall and winter, as suggested by gains in the leading index through most of 1986, this improvement in an already-strong economy will be hardly noticeable.

Looking ahead to the October index, the components derived from the purchasing survey registered a moderate net gain, seasonally adjusted. The net change was negative in September and nil in August. The index probably will return to its growth path in October.

– Tom R. Rex
Research Manager

ARIZONA ECONOMIC INDICATORS

	Month or Quarter	*Value*	*Percent Change from Previous Period*	*Percent Change from Year Ago*	**Year-to-Date** *Value*	**Year-to-Date** *Percent Change from Year Ago*
GROSS STATE PRODUCT (In Billions of Dollars, at Annual Rate)						
Arizona - Current Dollars	2nd Qtr.	51.629	1.5	9.9	NA	NA
Arizona - 1982 Dollars	2nd Qtr.	48.084	1.8	9.7	NA	NA
CONSUMER PRICE INDEX (1977 = 100)						
Metropolitan Phoenix	3rd Qtr.	193.7	0.6	1.2	NA	NA
INDEX OF LEADING ECONOMIC INDICATORS (1977 = 100)						
Arizona	Sept.	109.6	0.0	3.2	NA	NA
BUILDING PERMITS (Total Dollar Value in Thousands)						
Maricopa County	August	308,675	-19	-14	2,805,229	-3
Pima County	August	56,943	-10	-30	588,219	4
Balance of State	August	54,632	-16	16	417,735	-10
Arizona	August	420,250	-17	-17	3,811,183	-2
TOTAL HOUSING UNITS AUTHORIZED						
Maricopa County	August	3,321	-5	-36	33,359	-12
Pima County	August	777	-37	-37	8,363	-6
Balance of State	August	833	-23	-49	8,104	-32
Arizona	August	4,931	-15	-39	49,826	-15
HOME SALES						
Maricopa County - Number	Sept.	7,704	23	63	47,794	16
Maricopa County - Median Price	Sept.	80,000	1.3	6.7	77,900	6.0
HOUSING AFFORDABILITY INDEXES						
Metropolitan Phoenix - New Homes	3rd Qtr.	95	0.0	14.5	NA	NA
Metropolitan Phoenix - Resale Homes	3rd Qtr.	106	-1.9	10.4	NA	NA
MORTGAGE INTEREST RATES (Conventional, 30-year, Fixed-rate)						
Maricopa County	Oct.	9.9	0.0	-17.5	NA	NA
POPULATION ESTIMATES (In Thousands)						
Maricopa County	3rd Qtr.	1,922	1.1	4.6	NA	NA
Arizona	3rd Qtr.	3,413	1.0	4.2	NA	NA
ELECTRICAL POWER SALES (In Millions of Kilowatt Hours)						
Arizona	Sept.	3,060	-26.3	3.0	28,008	1.2

NA = Not Applicable

Source: Center for Business Research, College of Business, Arizona State University

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Quarterly Economic Forecast Update

'87 Likely To Be Fifth Year of Expansion

Since mid-1984, when the rapid recovery from the 1981-82 recession moderated, economic performance in Arizona, at least in the metropolitan areas, has continued to exceed historic norms. Nationally, however, economic growth has struggled to match its long-term average.

National economic growth frequently has been underestimated and the figures subsequently revised, since the transition to a mature expansion in 1984. These early indications of sluggish growth have helped to foster a generally pessimistic attitude concerning economic health, particularly among economic and financial analysts. Yet, except during second quarter 1986, the Gross National Product (GNP) has expanded at 2 to 4 percent annual rates, not far from the 3 percent long-term average.

A negative attitude toward the country's economic performance is easy to explain. The nation still has not fully recovered from the two recessions between 1980 and 1982, as evidenced by a high and steady 7 percent unemployment rate. Further, the trade and budget deficits have created additional problems, including unusually uneven conditions by sector.

Despite these issues, the current economic cycle can be viewed positively. Near-average growth for an extended period is an accomplishment, especially without rising inflation and interest rates. Late in 1987, the current expansion should break the peacetime record length of 58

See "Forecast," page 2

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16 AZ Economic Indicators

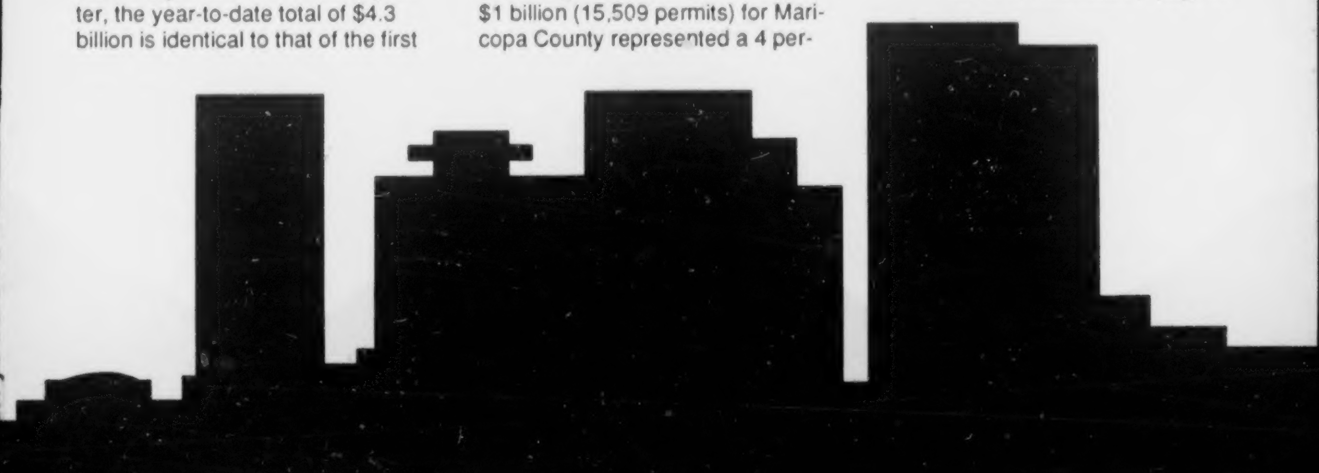
Third Quarter Construction Report

Activity Slows, Led By Commercial, Industrial

Although all major sectors recorded declines during the third quarter from second quarter levels, the Arizona construction industry is well on its way to achieving another good year. With $1.4 billion in total construction permits for the third quarter, the year-to-date total of $4.3 billion is identical to that of the first three quarters of 1985. Unlike the last few years, when the apartment and office building sectors led industry activity, the residential sector has been the fundamental area of activity during 1986.

Although the third quarter total of $1 billion (15,509 permits) for Maricopa County represented a 4 percent decrease from the dollar value of second quarter permits, the county continued to be the location for more than 70 percent of the state's recorded construction activity.

See "Construction," page 6



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months, set in the late 1970s. The experience of the 1980s may be preferable to the inflation-plagued booms of the early and late 1970s, which crashed into severe recessions.

The recessionary fears frequently expressed during the last two years have had little basis in the economic facts. While conditions could be better than they are, they easily could be far worse.

1987 NATIONAL FORECAST

The outlook, at an aggregate level, is for more of the same: GNP growth near 3 percent (see Table 1). However, the contributions of various segments of the economy will continue to vary.

The GNP comprises several components: personal consumption expenditures, non-residential fixed investment, residential fixed investment, net exports, government purchases, and change in business inventories. An analysis of these components reveals that economic growth has been variously stimulated and held back during the course of the expansion.

Slowing of the rapid growth that follows a recession is typical. Thus, the level of consumer expenditures, which account for nearly two-thirds of GNP, noticeably dropped in 1984. This decrease was accompanied by a swing in business inventories from a growth contributor to a detractor.

In 1985, a decline in non-residential fixed investment contributed to the slower economy but was partially offset by more residential activity and a higher level of government purchases. Non-residential activity slowed further in 1986, and government purchases dropped. Yet economic growth remained near 3 percent because of greater consumer expenditures and a more stable inventory situation.

The component so frequently in the news during the last year or two -- the trade deficit -- did not provoke the slowdown in 1984. Trade has been a significant drag on the economy throughout the expansion, but its impact was worse in 1983-84 than in 1985-86.

Control Forecast

While GNP probably will rise as fast in 1987 as in 1985 and 1986, the contributions of its components will swing again. With low savings rates, consumer spending almost certainly will drop back, nearing 1984-85 levels. Non-residential investment will remain a drag on the economy due to overbuilding, excess industrial capacity and the new tax laws. Residential investment probably will moderate.

These distressing developments should be neutralized by an improving trade situation. Even if the trade deficit does not shrink but merely stops expanding, the economy will receive a tremendous boost. In recent months, although still severely out of balance, imports declined while exports increased.

Alternative Scenarios

While the chance of a recession beginning during 1987 is minimal, subpar growth is a threat. A near-average growth scenario is predicated on an improvement in trade that, in turn, will boost industrial production. It still is too early to confidently state that the long-sought turnaround in trade has occurred.

TABLE 1
1987 ECONOMIC FORECAST: UNITED STATES
(Annual Average Percent)

	Actual *1985*	Projected *1986*	Forecast *1987*
Real Gross National Product	2.7	2.7	2.8
Industrial Production	2.2	1.0	3.0
Housing Starts*	1.7	1.8	1.7
Unemployment Rate	7.1	7.0	6.8
Consumer Price Index	3.6	2.0	3.2
Three-Month Treasury Bill Rate	7.5	6.0	6.0

***Number in Millions**

Source: **Center for Business Research, College of Business, Arizona State University**

Other possible causes of slower growth include further reductions in government spending, continued caution in building inventories and even weaker consumer expenditures than assumed in the control forecast. Annual growth of less than 2 percent is unlikely, however.

Optimistically, growth could exceed 3 percent, though 4 percent seems to be the top limit. Each component of GNP conceivably could contribute more (or drag less) than assumed in the control forecast, though trade still is the biggest single wild card.

1987 ARIZONA FORECAST

Economic expansion maintains a healthy pace in Arizona, though most indicators are registering smaller gains after peaking in 1984. The coming year probably will shape up as the fifth consecutive solid year, with only a few weak sectors.

Population

Population gains support the Arizona economy. Even after downward revision of the number of residents outside Maricopa County (see page 11), the number of new Arizonans set records both in 1985 and 1986. While net in-migration peaked during mid-1985, population increases should remain near the pace experienced between late 1983 and early 1985. This rate translates to another 120,000 Arizonans between mid-1986 and mid-1987.

In Maricopa County, population gains set records in each of the last three years, peaking at 88,000 for the period mid-1985 to mid-1986. While a decline to 80,000 is forecast for mid-1986 to mid-1987, this figure still exceeds those of all but the last two years.

Employment

Job creation moderated further during 1986 from the 1983-84 peak, a natural occurrence in any economic cycle. After the rush to re-employ those who lost jobs during the recession and to add new workers in preparation for the economic expansion, employment has settled down to an equilibrium state with population. As in the mature phases of the economic expansions of the 1970s, employment gains were about 60 percent of population increases in 1985 and 1986. This ratio should be stable through 1987.

The unemployment rate, then, also is in equilibrium. For most of the last two years, it has fluctuated in a narrow band from 6.5 to 7 percent. In the Phoenix area, the rate has remained below 6 percent. The annual average rate for 1987 should stay near the current 7 percent in Arizona and 5.8 percent in Maricopa County.

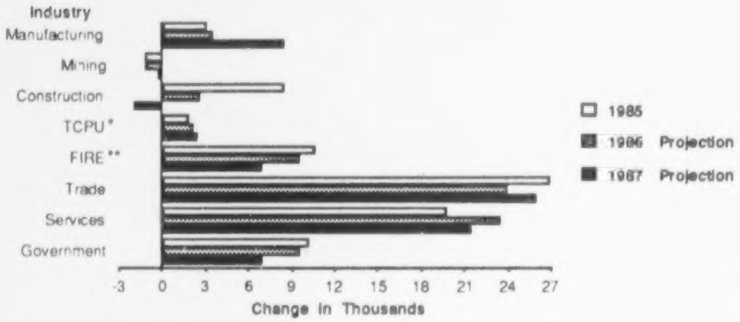
At the end of each of the last three years, the Arizona Department of Economic Security revised employment estimates upward. A revision, though relatively small, to 1986 data is expected and has been incorporated into the current projections and forecasts. This revision will place employment in better alignment with other data, such as population and personal income. Trade industry employment, in particular, is likely to be adjusted.

The total increase in employment during 1987 probably will be near 70,000, only slightly short of the estimated 1986 gain. Considerable variation exists by sector, however, as shown in Figure I. In particular, construction employment probably will decline, after growing only modestly in 1986.

In contrast, manufacturing employment should increase more rapidly in 1987, though still falling short of gains experienced during 1983-84. The trade situation in general, and as it relates to semiconductors and similar products in particular, should at least stop getting worse, if not actually improve.

Job creation in the other industries should not be much different from that during 1985-86. Trade and services will continue to provide the bulk of new jobs; these sectors have created more than one-half of all new jobs throughout this economic expansion. More than two-thirds of the new jobs will continue to be located in Maricopa County.

FIGURE I
ARIZONA EMPLOYMENT GROWTH
Non-agricultural Wage and Salary Changes, Year-End



*Transportation, Communications and Public Utilities
**Finance, Insurance and Real Estate

Source: Center for Business Research, College of Business, Arizona State University. Actual data for 1985 are from the Arizona Department of Economic Security.

TABLE 2
1987 ECONOMIC FORECAST: ARIZONA

	Actual *1985*	**Projected** *1986*	**Forecast** *1987*
Gross State Product			
Millions of 1982 Dollars	44,473[1]	48,300	51,050
Percent Change	8.5	8.6	5.7
Personal Income			
Millions of Current Dollars	40,775[1]	44,525	48,000
Percent Change	10.4	9.2	7.8
Retail Sales			
Millions of Current Dollars	16,169	17,150	18,350
Percent Change	9.7	6.1	7.0
Unemployment Rate			
Percent	6.5	6.7	6.9
Wage and Salary Employment			
Number in Thousands	1,278	1,353	1,419
Percent Change	8.2	5.9	4.9
Population			
Number in Thousands	3,200[1]	3,332	3,452
Percent Change	4.1	4.1	3.6
New Single Family Housing Units Permitted			
Number	33,271	33,800	32,350
Percent Change	7.8	1.6	-4.3
New Multifamily Housing Units Permitted[2]			
Number	37,312	26,350	16,700
Percent Change	-22.0	-29.4	-36.6
Value of Building Permits			
Millions of Current Dollars	5,449	5,325	4,925
Percent Change	3.5	-2.3	-7.5

[1] Revised
[2] Apartment complexes of three or more units

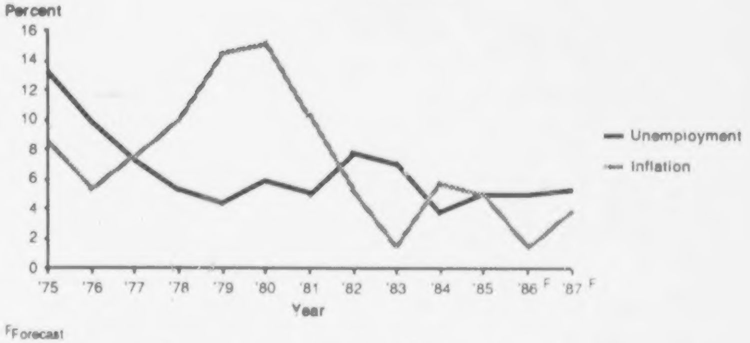
Source: Center for Business Research, College of Business, Arizona State University

Personal Income

The 1985 increase in personal income was revised up as expected. More surprising was the quarterly distribution, which contributed to the upward revision in projected gains during 1986; the 9.2 percent now expected matches the original Center forecast for 1986. With moderate inflation, the result is strong real growth of 6 percent in 1986, not much less than in 1985.

During mature expansions, inflation-adjusted growth in personal income usually is less than the

FIGURE II
UNEMPLOYMENT AND INFLATION RATES
Maricopa County



Source: Center for Business Research, College of Business, Arizona State University

change in employment; in 1985, the comparison was 6.9 percent to 8.2 percent. While personal income estimates still could be substantially revised, the 1986 real increase may be as large as that of employment. However, the traditional relationship should return in 1987, accounting for the predicted decline in personal income growth.

Gross State Product

In part because of the large personal income gain, the projected increase in real GSP for 1986 is greater than expected, matching the 8.5 percent gain of 1985 and far above the long-term average of 5.7 percent. Normally, during mature expansions, real GSP expands at a rate near that of employment and real personal income. While not far from this relationship in 1985, the difference projected for 1986 has widened.

A sharp decline in the real GSP growth rate is forecast for 1987 (see Table 2), but the 5.7 percent rate would still be higher than anticipated from the personal income and employment forecasts. The GSP deflator consistently has measured lower inflation than other gauges during the 1980s.

Inflation

The inflation outlook is unchanged. Low inflation measured by the Metropolitan Phoenix Consumer Price Index during 1986 should give way to a gradually accelerating rate. By the end of 1987, however, the rate should still be less than the 6 percent measured during 1984 and early 1985. As seen in Figure II, the inflation-unemployment situation will remain much more favorable than in the 1970s and early 1980s.

The GSP deflator and the GNP implicit price deflator, frequently used to deflate Arizona personal income, each should accelerate during 1987. These deflators, however, are not as volatile as consumer price indexes; they did not dip as low in 1986 and should remain less than 4 percent on an annual average basis during 1987.

Retail Sales

Forecasts of 1986 retail sales made throughout the year by the Center and by most local forecasters were much too high. The unexpected decline in inflation is largely responsible for lower sales. After adjusting for both population change and inflation, however, the real value of retail sales per person was unchanged during 1986. A slight gain had been anticipated.

With a cutback in consumer purchasing expected nationally, real retail sales per person in Arizona probably will remain flat during 1987. In nominal terms, retail sales should rise more rapidly in 1987 simply because of a higher inflation rate.

Construction

Construction activity during 1986 was mixed, with residential and miscellaneous construction increasing, while commercial and industrial building declined. Even within the commercial category, some sectors gained, while others dropped. The entire construction industry is likely to slow during 1987, though the rate of slackening will vary by sector. Despite this moderation, a fifth consecutive solid year is forecast.

Bolstered by falling mortgage interest rates, single family housing gained slightly in 1986 from already strong levels. In Maricopa County, approximately 24,000 housing units were permitted, a figure exceeded only in the 1977-78 housing boom. A fifth straight year between 21,000 and 24,000 units permitted is anticipated for 1987 (see Table 3).

The multifamily sector declined again in 1986, dropping to less than 20,000 units permitted, from 28,000 in 1985 and more than 37,000 in 1984. While the slowdown was not as rapid as had been expected one year ago, the pace did slow considerably during the summer. The rate does not need to decelerate much further to result in only 12,000 units permitted next year. With high vacancy rates, a sound single family market and tax law changes in place, the possibility of an even sharper drop during 1987 remains. Historically, however, 12,000 units permitted represented a solid year. With an expected addition of 80,000 residents to the Valley's population during 1987, even a decline to 34,000 total housing units permitted will not reduce high vacancy rates. Thus, the multifamily sector could experience problems for years to come.

Gains in retail and miscellaneous (mostly hotel) commercial construction did not affect the declines in apartment and office building during 1986. All commercial sectors likely will experience less construction in 1987. Likewise, industrial construction, which fell sharply during 1986, should decline further in 1987. This sector's 1985 value was unusually high because of the building of a handful of very large manufacturing plants.

The total construction value in Maricopa County should drop approximately 10 percent in 1987, following a 3 percent decline in 1986. A similar reduction should occur throughout the rest of Arizona. As a result, construction employment should be lower in 1987, after posting a minimal gain for 1986.

Alternative Scenarios

Almost no chance exists of a recession beginning by mid-1987, according to the Arizona Index of Leading Economic Indicators. The probability is not much greater later in 1987. Growth in the index during much of 1986 suggests somewhat improved economic conditions by the end of 1986.

According to the coincident index – the Arizona Trendline – economic growth was vigorous early in 1986 (verified by gains in personal income and GSP), then became erratic through October, the latest month for which data are available, as of this writing December 2. After strong gains during the summer, employment weakened considerably in September and October. These changeable conditions had been signaled by weakness in the leading index during late 1985. Thus, the upturn signaled by the index for the end of 1986 probably does not represent a surge to a higher level of economic activity as much as a return to earlier conditions after weakness in the fall.

Therefore, economic conditions much different from those in the control forecast are unlikely, especially through the summer of 1987. With generally healthy growth already occurring, much better conditions cannot be expected. No indication of impending hard times exists, however. While short cycles of stronger and weaker growth will continue, as they have since mid-1984, a case for significantly variant conditions is difficult to make.

COMPARISON TO OTHER FORECASTS

For approximately one year, a group of Arizona economists have published their forecasts in the *Arizona Blue Chip Economic Consensus*. In the latest monthly forecast, 12 seers offered a view of 1987. Strong agreement existed, with no one much more optimistic than the consensus and only one or two more pessimistic. Those expecting weaker conditions in 1987 were (and still are) pessimistic about the final numbers for 1986.

Nearly all panelists anticipate personal income rising 7 to 8 percent on a nominal basis, 4 to 5 percent on a real basis, in 1987. They forecast employment gains between 4 and 5 percent, with an unemployment rate between 6.5 and 7 percent. Panelists expect retail sales to grow between 6.5 percent and a little less than 8 percent, with an inflation rate (Metropolitan Phoenix CPI) between 3 and 4 percent. Nearly all look for the number of housing units permitted to decline, though the Center's forecast (-19 percent) is the most pessimistic.

TABLE 3
1987 ECONOMIC FORECAST: MARICOPA COUNTY

	Actual *1985*	Projected *1986*	Forecast *1987*
Consumer Price Index			
Percent Change	5.0	1.5	4.0
Retail Sales			
Millions of Current Dollars	10,830	11,450	12,250
Percent Change	11.2	5.7	7.0
Unemployment Rate			
Percent	5.1	5.4	5.6
Wage and Salary Employment			
Number in Thousands	840	893	938
Percent Change	9.1	6.3	5.0
Population			
Number in Thousands	1,814	1,902	1,982
Percent Change	4.9	4.9	4.2
New Single Family Housing Units Permitted			
Number	23,143	24,000	22,000
Percent Change	11.4	3.7	-8.3
New Multifamily Housing Units Permitted[1]			
Number	27,271	19,200	12,000
Percent Change	-25.9	-29.6	-37.5
Value of Building Permits			
Millions of Current Dollars	4,013	3,900	3,500
Percent Change	5.3	-2.8	-10.3

[1] Apartment complexes of three or more units

Source: Center for Business Research, College of Business, Arizona State University

Consensus forecasts generally have proven to be reliable indicators of economic conditions, though the nearly universally unexpected 1981-82 recession proves that blind reliance on such forecasts is unwise. Still, the panel's strong agreement justifies some confidence that surprises during 1987 are unlikely.

CONCLUSION

Stabilization, if not improvement, in the trade deficit should boost industrial production and manufacturing employment during 1987. Improvement in this area should offset weakening elsewhere, particularly in construction and consumer spending. The overall result should be another year of growth similar to that of both 1985 and 1986. These conclusions apply to both the national economy and the Arizona economy.

Caution always is advisable this late in an economic expansion, especially one marked by persistent national imbalances (trade and budget deficits, debt accumulation) and international concerns (particularly with debt repayment). However, signs of a recession are faint. Especially in Arizona, even the chance of a substantial growth slowdown is slim. Rather, given the age of the expansion and the nature of existing problems, a relatively optimistic outlook seems appropriate.

– Tom R. Rex
Research Manager

"Construction," from page 1

Permits issued in Arizona's 12 highest reporting units (Table 4) totaled $1.2 billion in value, 86 percent of the state total; nine of the reporting units are in Maricopa County. Pima County, with 12 percent ($172 million) of the state's activity, recorded an 18 percent decline from one year earlier and a 31 percent drop from the second quarter level. The commercial and industrial sectors in both metropolitan counties are down significantly from one year earlier (see Table 1).

SECTORAL ACTIVITY

Residential

Even though mortgage interest rates continued to decline during the third quarter, the single family sector, with 8,565 permits issued, recorded a 20 percent drop from the 10,655 permits of the second quarter. Even though this sector is not living up to expectations, the year-to-date total of 27,634 permits (26,859 permits for the same period in 1985) heralds a single family sector well on its way to the best year of the 1980s.

Maricopa County recorded 6,093 single family permits, down from 7,565 permits in the second quarter, for a year-to-date total of 19,715 permits. If this sector should continue at its current activity level, it will easily exceed last year's total of 23,143 permits, and 1986 could be the best year since the record year 1978 (30,479 permits). While the number of permits is lower than the second quarter total, the dollar value per permit jumped from $66,200 to $76,270. This increase represents the move-up market's push to acquire more expensive homes.

Pima County issued 1,135 single family permits during the third quarter, a 30 percent decrease from the second quarter number (1,631 permits) but a 28 percent increase from the total one year earlier (882 permits). Unlike Maricopa County, dollar value per permit declined slightly, from $68,100 in the second quarter to $65,404. Nearly 70 percent of the single family permits were issued for projects in unincorporated Pima County, with only 27 percent issued in Tucson.

The non-metropolitan counties followed the pattern of Maricopa County in issuing single family permits, moving from 1,459 permits in the second quarter to 1,337 permits; dollar value per permit increased from $52,200 to $59,600. Active areas of single family development were Lake Havasu City (111 permits) and the unincorporated areas of the following counties: Yavapai (310 permits), Coconino (115 permits), and Cochise (86 permits).

Commercial

During the last several years, the commercial sector has been the main stimulus for the construction industry's sustained, strong level of performance. However, over the last year, the apartment and office building segments have declined significantly in response to concerns about overbuilding and recent tax law changes (see Table 1).

Maricopa County's 4,324 authorized multifamily units represented a decline from 6,413 units in the second quarter. In comparison to the first three quarters of 1985, this period of 1986 shows activity down from 20,293 to 15,645 units, which could be the lowest total since the 9,785 units for the entire year 1982. With 1,168 authorized units, the multifamily sector in Pima County exhibited the same pattern that it did in Maricopa County. In the non-metropolitan counties, however, multifamily activity increased from 80 units in

TABLE 1
KEY SECTOR CONSTRUCTION ACTIVITY
(Third Quarter 1986, Second Quarter 1986, and Third Quarter 1985)

			COMMERCIAL							
	SINGLE FAMILY		APARTMENTS[a]		OFFICE BUILDINGS[b]		RETAIL STORES[c]		INDUSTRIAL	
	Number of Permits	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*
Maricopa County										
Third Quarter 1986	6,093	464,714,784	222	123,287,495	63	41,718,467	286	84,855,598	79	32,531,446
Second Quarter 1986 . . .	7,565	500,722,396	381	169,921,647	87	53,292,279	414	86,646,380	107	37,291,378
Third Quarter 1985	6,274	435,941,193	376	176,079,383	124	91,485,756	275	65,232,553	171	115,423,175
Pima County										
Third Quarter 1986	1,135	74,233,742	41	30,511,250	22	4,403,474	36	14,699,492	4	348,600
Second Quarter 1986 . . .	1,631	111,039,849	57	48,568,040	25	8,699,410	36	12,452,378	8	3,635,996
Third Quarter 1985	885	53,237,603	55	35,886,630	30	49,225,503	21	4,878,165	16	5,306,200
Rest of Arizona										
Third Quarter 1986	1,337	79,675,776	44	15,294,401	41	7,120,817	85	16,134,741	27	3,036,494
Second Quarter 1986 . . .	1,459	76,136,192	9	1,693,907	46	5,791,482	73	9,386,329	19	1,088,360
Third Quarter 1985	1,510	73,535,988	72	28,537,404	43	5,533,570	79	6,348,235	31	9,038,026
Arizona Total										
Third Quarter 1986	8,565	618,624,302	307	169,093,146	126	53,242,758	407	115,689,831	110	35,916,540
Second Quarter 1986 . .	10,655	687,898,437	443	220,183,594	158	67,783,171	523	108,485,087	134	42,015,734
Third Quarter 1985	8,905	577,172,596	503	240,503,417	197	146,244,829	375	76,458,953	218	129,767,401

[a] Five or more housing units

[b] Office, bank, medical and professional buildings

[c] Shopping centers and other mercantile buildings

Source: Center for Business Research, College of Business, Arizona State University

the second quarter to 640 units. The primary areas of multifamily development were Yuma (202 units), Kingman (144 units), Clarkdale (56 units), and unincorporated Yavapai County (54 units).

The most publicized commercial construction sector in the metropolitan counties over the last few years has been the office building segment. First, its record construction levels drew attention, then its record vacancy rates. In response to the concern about vacancies, development activity has declined. In Maricopa County, this sector has moved from permits valued at $91 million (124 permits) during third quarter 1985 to $42 million (63 permits). It appears that this sector may record its lowest level of activity since 1982's 404 permits, valued at $166 million, with a 1986 year-to-date total of $177 million (237 permits). With a decrease from $49 million (30 permits) for third quarter 1985 to the current level of $4.4 million (22 permits), Pima County's office building segment is responding to concerns similar to those in Maricopa County. Again, contrary to activity in the metropolitan counties and like the multifamily segment, office building activity increased in the non-metropolitan counties (see Table 1). However, only one project permit exceeded $1 million in value (Kingman City – $2.3 million).

The only consistently strong sector of commercial development has been the retail segment. Based on the $85 million (286 permits) of the third quarter, year-to-date retail activity in Maricopa County already totals $246 million (957 permits), in contrast to 985 permits ($257 million) in the record year 1985.

Pima County also had a good quarter, with activity valued at $15 million (36 permits), but is not near its 1981 record of $96 million (185 permits). The retail sector has been fairly strong in the non-metropolitan counties as well. Valued at $16 million, the 85 permits include projects in Benson (1 permit at $2.6 million), Flagstaff (7 permits at $1.4 million), Kingman City (4 permits at $2.6 million), Lake Havasu City (2 permits at $1.1 million), and Apache Junction (3 permits at $2.6 million).

Although lacking the consistent level of activity of the retail sector, Arizona's hotel/motel sector already has established a record year. Permits were valued at $129 million (4,000 rooms) in the first quarter, $16.5 million (900 rooms) in the second quarter, and $37 million (1,900 rooms) in the third quarter. Leading areas of third quarter activity were Flagstaff (157 rooms at $3.6 million), Phoenix (70 rooms at $1 million), and Scottsdale (166 rooms at $5 million).

Industrial

This sector posted a statewide decline of 75 percent, from $130 million (218 permits) during third quarter 1985 to the third quarter 1986 level of $36 million (79 permits). Most of the decline occurred in Maricopa County, which moved from $115 million (171 permits) to $33 million (79 permits). The primary reason for this decline is the absence of the single-user, large-dollar-value structure, which was so prevalent in last year's industrial activity. In 1985, 5 permits accounted for $80 million of the annual total ($308 million). So far in 1986, a total of $120 million in industrial permits have been issued, which is barely more

TABLE 2
ARIZONA HOUSING UNITS AUTHORIZED
Third Quarter 1986

	One Family	*Mobile Homes*	*Duplex*	*3-4 Family*	*5 or More*	*Total*
APACHE COUNTY	32	24	0	0	0	56
Percent Change, Previous Year	39	41	–	0	–	39
Percent Change, Previous Qtr.	-13	139	–	0	–	19
COCHISE COUNTY	102	97	2	0	24	225
Percent Change, Previous Year	10	14	–	0	19	14
Percent Change, Previous Qtr.	47	115	-75	–	–	78
COCONINO COUNTY.................	218	125	8	0	38	389
Percent Change, Previous Year	-17	-14	0	0	–	-7
Percent Change, Previous Qtr.	0	0	33	0	137	8
GILA COUNTY	82	66	0	0	0	148
Percent Change, Previous Year	-7	112	0	–	–	12
Percent Change, Previous Qtr.	1	1	–	–	0	-1
GRAHAM COUNTY....................	7	53	0	0	0	60
Percent Change, Previous Year	-84	10	0	–	0	-16
Percent Change, Previous Qtr.	-83	-5	0	0	0	-19
GREENLEE COUNTY..................	1	0	0	0	0	1
Percent Change, Previous Year	0	0	0	0	0	0
Percent Change, Previous Qtr.	0	0	0	0	0	0
LA PAZ COUNTY	0	0	0	0	0	0
Percent Change, Previous Year	–	–	–	–	–	–
Percent Change, Previous Qtr.	–	–	–	–	–	–
MARICOPA COUNTY..................	6,093	328	98	199	4,324	11,042
Percent Change, Previous Year	-2	-37	-35	-13	-26	-15
Percent Change, Previous Qtr.	-19	-14	-29	24	-32	-24
MOHAVE COUNTY....................	235	235	2	44	202	718
Percent Change, Previous Year	32	-42	0	1,366	494	14
Percent Change, Previous Qtr.	23	-3	0	1,000	–	63
NAVAJO COUNTY	127	28	2	0	24	181
Percent Change, Previous Year	-27	-81	0	–	0	-48
Percent Change, Previous Qtr.	-8	-6	–	–	–	7
PIMA COUNTY	1,135	256	30	252	1,168	2,841
Percent Change, Previous Year	1	-54	-37	739	-5	-5
Percent Change, Previous Qtr.	-30	-50	66	1,382	-32	-27
PINAL COUNTY	108	233	6	6	0	353
Percent Change, Previous Year	2	23	-78	-78	–	-59
Percent Change, Previous Qtr.	-33	5	-25	50	0	-10
SANTA CRUZ COUNTY	34	2	0	0	0	36
Percent Change, Previous Year	25	-96	–	–	–	-55
Percent Change, Previous Qtr.	100	-50	–	–	–	-2
YAVAPAI COUNTY...................	419	106	8	30	150	713
Percent Change, Previous Year	46	-59	-55	-47	177	5
Percent Change, Previous Qtr.	-3	-43	-71	3	134	-3
YUMA COUNTY	65	90	0	0	202	357
Percent Change, Previous Year	-60	-19	–	–	-52	-60
Percent Change, Previous Qtr.	-30	-20	–	–	–	72
TOTAL, ARIZONA	8,658	1,643	156	531	6,132	17,120
Percent Change, Previous Year	-1	-37	-39	39	-25	-15
Percent Change, Previous Qtr.	-18	-17	-31	140	-25	-19

Note: A dash indicates that a percent change could not be calculated because at least one period had no activity.

Source: Center for Business Research, College of Business, Arizona State University

than the $115 million reported in just the third quarter of 1985.

Industrial development in Pima County did not even reach a third quarter total of $1 million, with just 4 permits issued ($348,600). The nonmetropolitan counties' decline from $9 million (31 permits) in third quarter 1985 to $3 million (27 permits) still represents an increase from the $1 million of the second quarter (19 permits). As is typical in the nonmetropolitan counties, the permitted activity represented fairly small projects, such as those in Flagstaff (3 permits at $432,000), the Kingman area (1 permit at $462,733), Coolidge (1 permit at $240,000), Cottonwood (5 permits at $454,307), and unincorporated Yuma County (5 permits at $1 million).

Other

This sector is composed of many unrelated private and public areas of construction activity. Most frequently permitted were educational facilities, with a statewide total of $56 million (66 permits). The year-to-date total of $150 million (180 permits) means that the permits granted for educational facilities just through third quarter 1986 have a higher value than those granted for all of 1985 (196 permits valued at $104 million). For the third quarter, active areas included Yuma (6 permits at $5 million), unincorporated Pima County (3 permits at $4.5 million), Tempe (5 permits at $6.5 million), Mesa (6 permits at $17.5 million), and Chandler (18 permits at $11.8 million).

TABLE 3
ARIZONA BUILDING PERMITS
Third Quarter 1986

	Residential*		Commercial		Industrial		Other		Total	
	Number of Permits	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*
APACHE COUNTY	70	1,846,100	2	6,000	0	0	11	1,293,445	83	3,145,545
Percent Change, Previous Year	25	58	-33	-98	0	0	175	–	31	136
Percent Change, Previous Qtr.	1	-15	-71	-97	0	0	83	906	1	22
COCHISE COUNTY	380	8,370,418	9	3,539,937	3	215,000	176	4,276,728	568	16,402,083
Percent Change, Previous Year	20	31	-18	-53	-25	-16	-48	-11	-15	-13
Percent Change, Previous Qtr.	39	67	-43	79	50	688	4	180	23	92
COCONINO COUNTY	615	17,883,718	26	6,463,386	4	507,000	142	3,474,127	787	28,328,231
Percent Change, Previous Year	-7	0	225	134	0	-6	-11	-65	-5	-9
Percent Change, Previous Qtr.	17	13	62	16	100	641	-1	-47	15	1
GILA COUNTY	312	6,056,234	11	519,287	1	2,000	47	1,781,689	371	8,359,210
Percent Change, Previous Year	31	28	9	-60	0	-86	17	52	28	15
Percent Change, Previous Qtr.	15	3	0	-11	-66	-95	2	184	12	17
GRAHAM COUNTY	104	1,380,445	11	362,500	0	0	17	98,115	132	1,841,060
Percent Change, Previous Year	-18	-17	9	164	–	–	-31	-96	-19	-60
Percent Change, Previous Qtr.	-14	-32	119	136	0	0	6	167	-7	-17
GREENLEE COUNTY	7	25,000	0	0	0	0	2	1,300	9	26,300
Percent Change, Previous Year	600	66	0	0	0	0	0	-84	200	13
Percent Change, Previous Qtr.	75	12	0	0	0	0	100	-95	79	-51
LA PAZ COUNTY	13	29,107	2	116,000	0	0	31	39,358	46	184,465
Percent Change, Previous Year	-78	-98	-33	-58	0	0	-24	-87	-55	-86
Percent Change, Previous Qtr.	8	1	100	169	0	0	933	248	187	122
MARICOPA COUNTY	8,171	486,425,662	815	313,799,018	79	32,531,446	6,444	182,565,850	15,509	1,015,321,976
Percent Change, Previous Year	-6	5	-8	-19	-53	-71	-8	34	-7	-7
Percent Change, Previous Qtr.	-17	-8	-15	-6	-26	-12	-20	3	-18	-4
MOHAVE COUNTY	990	20,018,930	44	14,007,439	3	490,833	259	3,821,288	1,296	38,338,490
Percent Change, Previous Year	22	72	-22	396	-25	-68	-37	153	1	117
Percent Change, Previous Qtr.	2	42	69	382	-25	72	-39	105	-8	100
NAVAJO COUNTY	261	7,708,510	7	970,682	1	57,600	158	909,425	427	9,646,217
Percent Change, Previous Year	-44	10	-41	-13	0	-17	56	45	-27	9
Percent Change, Previous Qtr.	-17	8	-61	55	-50	-80	102	10	2	9
PIMA COUNTY	2,178	79,531,105	112	53,902,745	4	348,600	1,486	38,367,103	3,780	172,149,553
Percent Change, Previous Year	-23	7	-8	-46	-75	-93	-3	18	-16	-18
Percent Change, Previous Qtr.	-26	-31	-15	-31	-50	-90	-20	-29	-23	-31
PINAL COUNTY	456	9,481,348	25	8,073,984	3	290,540	215	2,831,196	699	20,677,067
Percent Change, Previous Year	16	21	-58	-56	-25	-82	-36	8	-11	-31
Percent Change, Previous Qtr.	-8	-11	96	261	–	–	-29	-6	-14	29
SANTA CRUZ COUNTY	45	2,389,878	2	26,500	0	0	9	69,280	56	2,485,658
Percent Change, Previous Year	-42	71	100	-56	–	–	125	233	-33	14
Percent Change, Previous Qtr.	21	51	0	-93	–	–	-25	-78	7	2
YAVAPAI COUNTY	770	30,086,253	58	7,352,811	7	518,029	247	4,317,637	1,082	42,274,730
Percent Change, Previous Year	5	61	48	-44	16	-57	2	2	6	13
Percent Change, Previous Qtr.	-12	-4	26	46	133	240	-43	50	-20	6
YUMA COUNTY	229	6,493,123	38	7,642,375	5	955,492	146	8,393,391	418	23,484,381
Percent Change, Previous Year	-31	-45	-47	-54	0	-66	28	48	-20	-37
Percent Change, Previous Qtr.	-27	-28	79	49	150	1,198	-6	251	-15	41
TOTAL, ARIZONA	14,601	677,724,831	1,160	416,782,064	110	35,916,540	9,392	252,239,931	25,263	1,382,663,366
Percent Change, Previous Year	-7	8	-10	-24	-49	-72	-9	24	-9	-8
Percent Change, Previous Qtr.	-14	-8	-9	-4	-17	-14	-19	0	-16	-5

*Includes mobile homes

Note: A dash indicates that a percent change could not be calculated because at least one period had no activity.

Source: Center for Business Research, College of Business, Arizona State University

Development activity in the area of health care facilities throughout Arizona has already exceeded last year's total value, moving from $61 million (48 permits) to $68 million (36 permits) in third quarter 1986. Health care facilities construction was evident in Springerville (1 permit at $1.2 million), Flagstaff (1 permit at $1.8 million), Phoenix (5 permits at $4.8 million), Chandler (2 permits at $9.7 million), and Bullhead City (1 permit at $2.3 million).

LOOKING AHEAD

Construction activity, like general economic activity in Arizona, has been good but unspectacular during 1986. The industry has not performed with the elan of the last few years. This "dullness" can be attributed to the lack of dominance by any specific segment, such as multifamily housing or office buildings.

Development of new office buildings, especially the high-rises in Maricopa and Pima Counties, was a visible expression of a strong real estate market. Now, the market is vexed with concern about the future potential of all elements of the commercial sector. Further, the current active areas of development – hotel/motels, retail (mostly small centers), and educational facilities – do not have the broad-based impact that creates confidence in the future real estate market. The fundamental strength of the 1986 construction industry has not been as evident as in the past.

There is strength, however, in realistic levels of activity that can be sustained in a slower economic environment. Because no major sector is expected to grow in 1987 over 1986, total construction activity will decline during the forthcoming year. The slowdown will be most evident in multifamily housing in the metropolitan areas as development adjusts to reduced demand and the new tax law. The office building segment, with major projects in the pipeline, could sustain its current level of activity. Because many local industrial companies are facing strong foreign competition, there is no reason to expect improvement in the industrial sector during 1987.

Mortgage interest rates are not expected to significantly increase during 1987. Hence, current single family development should remain stable. Lower rates are sustaining the market, not stimulating it. Since the new home market in Maricopa County is so competitive, homebuyers, especially the move-up market, should find a wide range of "products" at very affordable financial terms.

When construction activity slows in the metropolitan counties, it tends to pick-up in the non-metropolitan areas. Frequently, these markets are overlooked in an attempt to fulfill the growing needs of Pima and Maricopa Counties. While they may improve, the non-metropolitan markets are not at levels comparable to the metropolitan markets, nor are they strong enough to sustain the statewide construction totals. In 1986, the apartment, retail and office building sectors improved. It must be recognized that these markets are small. Hence, they lack the depth to maintain increasing levels of development activity for any lengthy period of time.

TABLE 4
REPORTING UNITS WITH GREATEST TOTAL VALUE OF BUILDING PERMITS
Third Quarter 1986

Reporting Unit	Value (in millions)
Phoenix	$300.5
Mesa	179.6
Scottsdale	144.6
Chandler	95.2
Unincorporated Pima County	85.2
Tempe	84.1
Unincorporated Maricopa County	81.3
Tucson	79.9
Glendale	50.3
Peoria	38.7
Gilbert	29.1
Unincorporated Yavapai County	24.9

Source: Center for Business Research, College of Business, Arizona State University

The current construction year will be a good one, with activity in the segments of retail, hotel/motel, and educational facilities near or already surpassing previous records. However, concerns are increasing about the future potential of the economy and construction activity. Hence, construction activity in 1987 is expected to decline, though not dramatically, to end the year at a level slightly below 1986.

– Jay Q. Butler

Dr. Butler is Associate Professor of Real Estate and Director of the Arizona Real Estate Center in the ASU College of Business.

'87 Economic Outlook Survey

Arizona's Small Businesses More Optimistic Than Large Firms

Small business managers are slightly more optimistic than large employers on the national economic outlook for real growth during 1987, according to surveys of Arizona private employers conducted by the Center for Business Research. The most frequent response for both groups indicated an expectation of national growth at approximately the same below-average rate experienced in 1986 (see Figure I).

THE SURVEYS AND RESULTS

The Center conducted both surveys during the first week of November 1986. One set of survey forms was circulated to the chief executives of Arizona's 100 largest employers. This size classification includes key manufacturers whose output constitutes the primary link between the Arizona economy and national/international markets. Large firms make up less than 1 percent of the state's businesses, yet they provide employment for more than 40 percent of the labor force – some 500,000 Arizona workers (based on unpublished data made available through the Arizona Department of Economic Security).

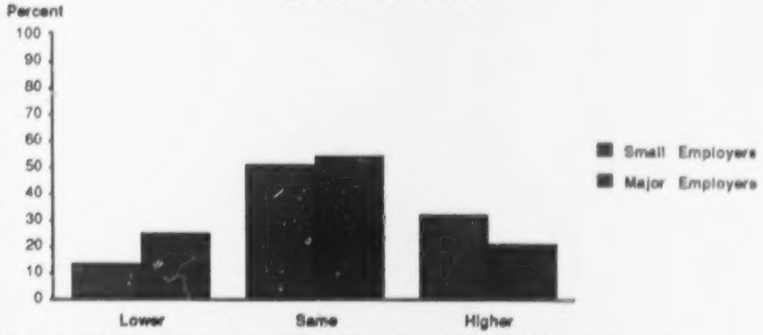
The Center mailed another set of survey forms to 225 owners and managers of small private businesses in the state, randomly selected from commercial telephone listings. Of 71,988 businesses in Arizona at the beginning of 1986, 99 percent met the Small Business Administration's definition of a small business, employing fewer than 250 people. Nine out of 10 Arizona firms employ fewer than 50 workers.

The questions asked large employers were identical to those asked the small firms. They dealt with the businessperson's economic outlook for 1987. The results in two categories follow:

Hiring Plans

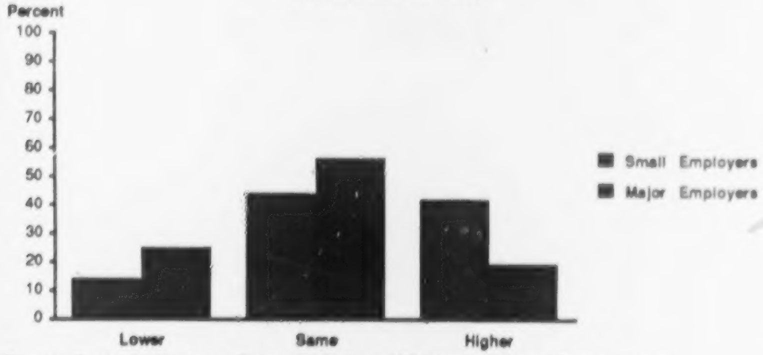
Small business's hiring plans for 1987 reflect a growth orientation, with 42 percent of respondents anticipating faster-paced job creation in 1987 than in 1986; only about one in seven expects to hire at a reduced rate. Of major employers, however, one in four said they will hire fewer workers in 1987 than in 1986. Still, most major employers foresee new job opportunities in 1987 similar to the level of 1986. Since they are subject to national economic factors, their hiring plans tend to be influenced by their outlook for real national growth (compare Figures I and II).

FIGURE I
ECONOMIC OUTLOOK FOR 1987 NATIONAL REAL GROWTH, COMPARED TO 1986



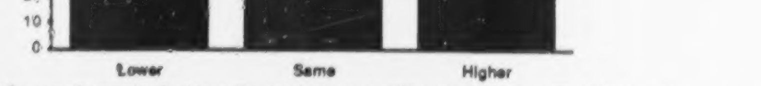
Source: Center for Business Research, College of Business, Arizona State University

FIGURE II
OUTLOOK FOR 1987 HIRING, COMPARED TO 1986



Source: Center for Business Research, College of Business, Arizona State University

FIGURE III
OUTLOOK FOR 1987 CAPITAL SPENDING, COMPARED TO 1986



Source: Center for Business Research, College of Business, Arizona State University

'87 Capital Expenditures

The optimism of small employers is evident again in their capital expenditure plans for 1987, with 42 percent expecting to spend at a pace exceeding that of 1986. While a majority of major employers report hiring plans for 1987 similar to those of 1986, only one in four will undertake capital spending during 1987 similar to that of 1986. Most major employers are planning to reduce capital spending in 1987, but an additional 30 percent are planning to spend more (see Figure III).

GENERAL OUTLOOK

A dichotomy between the expansion plans of large and small employers sharply illustrates the differential effects of national and local markets. Large manufacturing employers are subject to national and, in many cases, international market conditions and competitive forces. Hence, their economic outlook for 1987 is much more uncertain than that of the small businesses oriented to the more vigorous Arizona economy. In many cases, larger firms have available capacity and are contemplating selective modernization, rather than the expansion of physical plant that smaller businesses are planning. Small employers, one-third in the services sector, will be a strong source of capital spending and new job creation in 1987, provided in-migration continues to stimulate local markets, and public policy encourages a strong Arizona business climate.

– Lee R. McPheters

Dr. McPheters is Professor of Economics and Director of the Center for Business Research. He gratefully acknowledges the research assistance of Martha Clyde.

Metropolitan Growth Masks Trouble Elsewhere in Arizona

Tremendous growth has occurred in Arizona's metropolitan areas, particularly the Phoenix area, since the end of the last recession in late 1982. Because the Phoenix and Tucson areas account for 83 percent of the state's employment and 76 percent of its population, the aggregate numbers for Arizona also show rapid growth. Yet expressions such as "boom" hardly apply to most of the non-metropolitan areas; in some cases, "depressed" is a more appropriate term.

EMPLOYMENT

In June 1986, 243,500 more people were working in Maricopa County than in June 1980, an increase of 35 percent. During the same period, the county's unemployment rate fell to the lowest level in the state (see Table 1). More than 63 percent of the state's employment was located in metropolitan Phoenix in 1986. This area's share of the state's employment growth between 1980 and 1986 was even greater – 72 percent.

New job creation varied widely throughout the rest of Arizona. The percent increase in the Tucson area exceeded the rate in the Phoenix area, while employment growth in Mohave and Cochise counties was not far behind. Of the remaining counties, however, only Yavapai's employment rose by more than a minimal amount. Even though June 1980 marked the midst of a recession, in which employment was depressed, employment *declined* in six counties between June 1980 and June 1986. Outside the two metropolitan areas, the net increase in employment amounted to a paltry 4.5 percent during this six-year period.

As would be expected from the dismal employment gain, the unemployment rate in the non-metropolitan counties jumped from 9.2 percent in June 1980 (already high, due to the recession) to 14.5 percent in June 1986. The rate declined only in Yavapai and Cochise counties.

TABLE 1
EMPLOYMENT AND UNEMPLOYMENT

	Total Employment (In Thousands)			Unemployment Rate (In Percent)		
	June 1980	*June 1986*	*Percent Change*	*June 1980*	*June 1986*	*Change*
Apache	13.7	11.9	-13.1	19.1	23.2	4.1
Cochise	25.5	33.1	29.8	9.4	7.8	-1.6
Coconino	34.1	35.7	4.7	7.7	11.5	3.8
Gila	14.8	10.7	-27.7	8.7	14.9	6.2
Graham	7.1	6.9	-2.8	10.1	11.5	1.4
Greenlee	4.8	2.6	-45.8	4.1	9.2	5.1
Maricopa	695.1	938.6	35.0	6.7	5.2	-1.5
Mohave	19.6	25.1	28.1	7.5	9.2	1.7
Navajo	22.8	22.2	-2.6	14.5	18.2	3.7
Pima	206.6	290.8	40.8	6.6	5.4	-1.2
Pinal	29.5	30.2	2.4	8.4	12.2	3.8
Santa Cruz	7.4	8.0	8.1	13.4	15.9	2.5
Yavapai	27.9	31.7	13.6	7.0	6.7	-0.3
Yuma*	32.7	32.6	-0.3	12.8	27.0	14.2
Non-metropolitan	239.9	250.6	4.5	9.2	14.5	5.3
Arizona	1,141.6	1,480.0	29.6	7.5	6.9	-0.6

*Combines Yuma and La Paz counties; La Paz County was created from the original Yuma County on January 1, 1983.

Source: Arizona Department of Economic Security

TABLE 2
POPULATION ESTIMATES
(In Thousands)

	1970 Census	1980 Census	1986 Estimate*	Average Annual Change 1970-80	Average Annual Change 1980-86
Apache	32.3	52.1	58.0	1.9	1.0
Cochise	61.9	85.7	96.0	2.4	1.7
Coconino	48.3	75.0	89.0	2.7	2.3
Gila	29.3	37.1	40.0	.8	.4
Graham	16.6	22.9	25.0	.6	.3
Greenlee	10.3	11.4	10.0	.1	-.2
La Paz	NA	12.6	14.0	NA	.2
Maricopa	971.2	1,509.3	1,902.0	53.8	65.5
Mohave	25.9	55.9	77.0	3.0	3.4
Navajo	47.6	67.6	74.0	2.0	1.0
Pima	351.7	531.4	643.0	18.0	18.6
Pinal	68.6	90.9	104.0	2.2	2.1
Santa Cruz	14.0	20.5	24.0	.7	.6
Yavapai	37.0	68.1	90.0	3.1	3.7
Yuma	NA	76.2	88.0	NA	2.0
Non-metropolitan	452.5	675.9	787.0	22.3	18.6
Arizona	1,775.4	2,716.6	3,332.0	94.1	102.6

NA: Not available; La Paz County was part of Yuma County prior to 1983.

*As of July 1; census counts as of April 1.

Source: U. S. Bureau of the Census (1970 and 1980) and Center for Business Research, College of Business, Arizona State University (1986). The 1986 estimates are based largely on work by the Arizona Department of Economic Security, Population Statistics Unit, but are not the state's official population estimates.

POPULATION

In Maricopa County, the average annual increase in population during the 1980s – 65,500 – has been more than 20 percent greater than the 53,800 average of the 1970s (see Table 2). Maricopa County's share of the state's population has grown steadily, reaching 57 percent in 1986. Its share of population change is greater, at 64 percent during the 1980s. In terms of net migration (the primary cause of Arizona's population gains), more than two of every three people who move to the state settle in metropolitan Phoenix, comparable to the area's share of employment growth.

Rural Counties

In Arizona's non-metropolitan counties, the average annual change in population has been 17 percent *less* during the 1980s than in the 1970s. Only two counties – Mohave and Yavapai – experienced faster annual growth from 1980-86 than from 1970-80. Both counties receive considerable retirement in-migration. Mohave County's growth has been further stimulated by the development of the gambling industry in Laughlin, Nevada.

One county – Greenlee – lost population between 1980 and 1986, due to the scaleback of mining operations in Clifton/Morenci. Two other counties – Apache and Navajo – suffered from net out-migration, but net natural increase caused their populations to grow nonetheless. Movement by Indian residents away from each county contributed to the net out-migration.

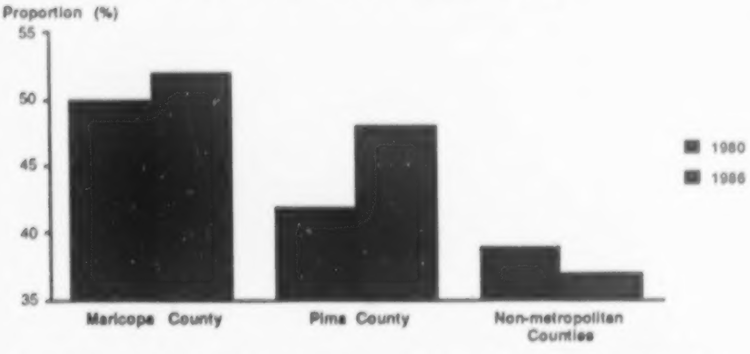
Pima County

Demographic and economic information for the Tucson metropolitan area indicate varying amounts of growth during the 1980s. The special census conducted in 1985 indicates that the population rose approximately one-half as fast as in the Phoenix metropolitan area, slower than expected by most demographers and economists. This relatively slow growth seems to be verified by other demographic measures, such as new housing units constructed and migration data from the Internal Revenue Service.

The special census still is under appeal, however. A substantial undercount may have occurred. Thus, Pima County's estimated annual population gain between 1980 and 1986 is higher than shown by the special census – slightly more than the average between 1970 and 1980.

Even faster population growth is indicated by employment and labor force data, which rose more rapidly than in any other county between 1980 and 1986. The labor force-to-population ratio rose sharply during a period when this proportion was relatively constant in most other areas (see Figure I). If the actual population is lower than the 643,000 estimated – a strong case can be built for a population near 615,000 – then this ratio increased even more rapidly.

FIGURE I
LABOR FORCE TO POPULATION RATIO



Source: Center for Business Research, College of Business, Arizona State University

POPULATION PROJECTIONS

The geographic disparity of population growth during the last several years raises questions regarding the magnitude and distribution of growth in coming years. More than one-half of Arizona's population growth results from employment-related net migration. The magnitude of this migration depends on several factors: demographics; the vitality of the Arizona economy; the economic health of rival states, such as California and Texas; and the national economic cycle.

Demographically, most of this migration involves young adults, particularly those in their 20s and early 30s. Because of the aging of the baby-boom generation, which was followed by the "baby bust," the national population in this age group will decline during the 1990s and into the 21st century. Therefore, the supply of potential migrants to Arizona will decline.

Economically, the disappearance of the business cycle is highly unlikely. Further, economic growth nationally should slow in response to less labor force growth – largely the result of a smaller young adult population. Given these conditions, it is difficult to build a case in which average long-term growth of the Arizona

TABLE 3
POPULATION PROJECTIONS
In Thousands

	1980	1990			2000			2010		
	Census	*Low*	*Middle*	*High*	*Low*	*Middle*	*High*	*Low*	*Middle*	*High*
Maricopa	1,509	2,150	2,220	2,260	2,800	2,960	3,250	3,460	3,710	4,050
Pima	531	710	720	730	890	950	970	1,070	1,220	1,260
Non-metropolitan	677	870	870	870	1,070	1,070	1,080	1,280	1,290	1,340
ARIZONA	2,717	3,730	3,810	3,860	4,760	4,980	5,300	5,810	6,220	6,650

Source: **Center for Business Research, College of Business, Arizona State University**

economy would be more spectacular than it was during the last 15 years.

Thus, unless economic conditions worsen in competing states, prompting more migrants to move to Arizona, the state should grow less rapidly after the late 1980s.

Scenarios

In contrast, some population projections assume consistently more employment-related net migration than experienced during the record 1984-86 period; these numbers are displayed as the "high" scenario in Table 3.

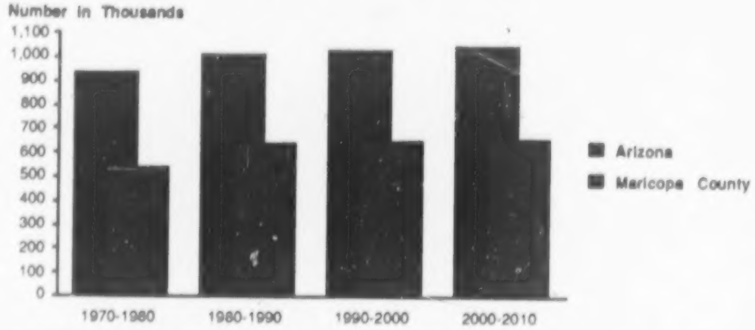
The "low" scenario assumes no change in economic conditions from those prevailing between 1970 and 1986 and strictly adheres to demographic changes caused by the aging population. It provides projections not much higher than the consensus reached in the July/August 1986 *Arizona Business*, page 1.

The "middle" scenario allows the population to rise more rapidly than in the "low" scenario while still maintaining demographic controls on the speed of the growth. It produces higher projections because it assumes that Arizona will do somewhat better competitively (though not as well as in the peak years), mainly because the economies of Texas and other energy-producing states probably will not again do as well as they did between the early 1970s and early 1980s.

Metropolitan v. Rural Growth

Each of the projections assumes that the urban areas will continue to grow much more rapidly than the non-metropolitan counties. The attraction of non-urban areas was a brief phenomenon that did not persist into the 1980s. Economic opportunity, the most important migration motivator, is not sufficient in most rural areas to attract many working adults. Thus, growth in most outlying areas is likely to remain slow.

FIGURE II
POPULATION CHANGE



Note: Projections use "low" scenario.

Source: U.S. Department of Commerce, Bureau of the Census; and the Center for Business Research, College of Business, Arizona State University

CONCLUSION

Despite hundreds of miles of sparsely settled countryside, Arizona is becoming a highly urbanized state. By the end of the century, nearly 80 percent of the state's population will reside in the two metropolitan areas, with approximately 60 percent in metropolitan Phoenix alone.

While the slump that has afflicted many of Arizona's rural areas during the 1980s should moderate, a return to the more rapid growth of the early-to-mid 1970s is unlikely. Many areas still are highly dependent on agriculture and mining, which have been primarily responsible for the depressed conditions. Neither holds much promise for the future.

Meanwhile, the urban areas, particularly Phoenix, continue to grow at rates among the fastest in the nation. No one disagrees that each area will continue to grow rapidly; only the rate of growth is in question. Even under the "low" growth scenario, the total population change for each decade through 2010 will be minimally greater than the change in the preceding decade (see Figure II). Net natural increase and non-employment-related migration will push the population ever higher.

– Tom R. Rex
Research Manager

Population Model

The Center's population model (see January 1986 *Arizona Business*) depends on information specific to Maricopa County. By accurately estimating the 1985 special census count, it proved its reliability for Maricopa County.

Estimates of the state's population, however, were based on the assumption that the rest of the state would continue to grow only slightly slower than Maricopa County, as during the 1970s. The information presented in this article clearly indicates that this is not a reasonable assumption; the previously published estimate of the July 1, 1986, population was 48,000 people higher than the 3.332 million figure shown in Table 2.

Purchasing Indicators Flatten in November

The Arizona economy was flat in November, as both inventory levels and employment dropped. New orders received increased, but only slightly. Production and purchase commitments also advanced, but at moderate rates. It was not a distinguished economic performance.

The economy has not been able to shift out of second gear. While activity has increased overall in 1986, the economy has been sluggish, and it is unlikely that the tempo will pick up appreciably during the first quarter of 1987. One benefit is that the moderate growth performance seems to be keeping the lid on a resumption of severe inflationary pressures.

Table 1 presents the results of the November survey of Arizona purchasing managers. Analysis of these results follows.

PRICES

Prices paid for purchased items accelerated in November at approximately the same rate as in October. The past year has seen consistent, controlled price increases in each month, a major factor permitting the expansion to continue for four years.

DELIVERY TIME

Delivery time on shipments from vendors stretched in November at the greatest rate since May, signaling that suppliers' operating levels are increasing.

INVENTORY LEVELS

Inventory levels of purchased materials experienced its largest drop since May 1985. Levels have been essentially stable in 1986, with about an equal number of months of small increases and decreases. The November decrease is disappointing, since it indicates that Arizona firms are concerned about future business activity and may be "battening down the hatches," which could become a self-fulfilling prophecy.

NEW ORDERS

New orders booked by Arizona firms grew only slightly, after jumping in September and October. This was the smallest gain in almost four years (since December 1982), when the current recovery began, and shows that incoming business is in the doldrums.

PRODUCTION

Production increased at a somewhat lower rate than in each of the previous three months. If the slow growth in new orders continues, further hikes in production will be at very moderate rates, or production may actually decline.

EMPLOYMENT

Employment decreased slightly in November – only the second decline of 1986. This weak performance indicates an economy that is downshifting to almost a no-growth pace.

PURCHASES

Purchases of materials and supplies advanced again in November, but at half October's rate. With the new order and production rates flattening out, the need for additional purchases is diminished.

– Harold Fearon

Dr. Fearon is the National Association of Purchasing Management Professor in the ASU College of Business.

Arizona Purchasing Survey

Now in its 25th year of monthly reporting, Dr. Harold Fearon's survey of Arizona business conditions utilizes data from a questionnaire sent to members of the purchasing management associations of Arizona and southern Arizona. It asks them to indicate the direction of activity - higher, unchanged, or lower - of seven key measures of economic activity in the month just ended. These purchasing managers deal daily with supply, demand, and price factors in the marketplace; their aggregate readings have accurately charted the state's economic course for two decades, providing timely data on turning points.

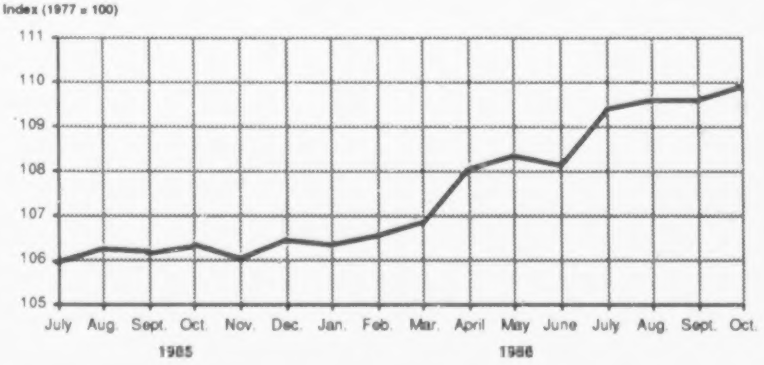
TABLE 1
NOVEMBER PURCHASING SURVEY

	Percent of Purchasing Managers Indicating Each Response (November compared to October)		
Key Indicators	*Higher*	*Same*	*Lower*
Prices paid for major commodities	23	72	5
Delivery time from vendors	24	71	5
Purchased materials inventory level	23	45	32
New orders received	30	42	28
Production	30	52	18
Employment	14	71	15
Purchases	34	38	28

Source: Purchasing Management Association of Arizona and the Purchasing Management Association of Southern Arizona

Arizona Leading Index Registers Moderate Gain in October

FIGURE I
ARIZONA INDEX OF LEADING ECONOMIC INDICATORS



Source: Center for Business Research, College of Business, Arizona State University

TABLE 1
NET CONTRIBUTION OF INDIVIDUAL COMPONENTS TO THE ARIZONA INDEX OF LEADING ECONOMIC INDICATORS

	Net Contribution+			
	July	*Aug.*	*Sept.*	*Oct.*
Delivery Time*	.04	-.02	-.02	.07
Inventory Levels*	.01	.04	-.04	.06
New Orders*	.04	-.04	.09	-.05
Production*	.07	.04	.00	.01
Employment*	.03	.00	-.11	.07
Residential Building Permits	.27[r]	-.07[r]	.16[r]	-.34
Unemployment Insurance Claims	.01	.12	-.12	-.05
Average Workweek, Manufacturing	.05	-.05	.00	.05
Money Supply	.47	.34[r]	.12[r]	.34
Change in Sensitive Materials Prices	.06	-.16	-.09	.16
OVERALL INDEX	1.05[r]	.21[r]	.00[r]	.32

[r] Revised

+The net contribution of each component is calculated by multiplying the monthly percent change in its index by its relative importance.

*Based on indicators from the purchasing management associations of Arizona and southern Arizona.

Source: Center for Business Research, College of Business, Arizona State University.

The Arizona Index of Leading Economic Indicators rose 0.3 percent in October to an index value of 109.9 (see Figure I). Gains in the index have slowed since August, after rapid advances during the spring and early summer.

The index, however, still is rising, in contrast to the situation during 1984-85, when it fell in 11 of 24 months. During the nine months ending in October, the index increased 3.3 percent, more than during any nine-month period since that ending in November 1983.

Seven index components rose in October, a figure exceeded only once since 1983. The national money supply (M2) led the way (see Table 1). The net increase in the indicators derived from a survey of Arizona purchasing managers also pushed the index up, with advances in the delivery time, inventory level and employment components. Each offset a decline in September. Reversing direction from the large declines in August and September, the change in sensitive materials prices component rose more than in any month since early 1983.

Residential building permits fell sharply in October, the major negative influence on the index. Despite the largest monthly drop since 1982, this component remained higher than it was prior to spring 1986. Since this indicator tends to fluctuate widely from month to month, the decline probably is of no significance.

OUTLOOK

Despite the increasing age of the expansion (October was the 51st month), the chance of a recession beginning during the next several months remains a slight 1 percent. Ongoing gains in the index signal that the Arizona economy should continue its healthy growth.

Additional modest gains in the index seem likely. Residential building permits probably will increase in November and December due to the low value in October and to further declines in mortgage interest rates.

October's small rise in sensitive materials prices did not completely offset earlier declines, making another advance probable. Though a more moderate growth rate than last spring's is likely, the national money supply probably will expand again. The net change in indicators derived from a survey of purchasing managers, however, was negative in November, due to sharp declines in the inventory levels and new orders components.

– **Tom R. Rex**
Research Manager

ARIZONA ECONOMIC INDICATORS

	Month or Quarter	*Value*	*Percent Change from Previous Period*	*Percent Change from Year Ago*	**Year-to-Date** *Value*	**Year-to-Date** *Percent Change from Year Ago*
GROSS STATE PRODUCT (In Billions of Dollars, at Annual Rate)						
Arizona - Current Dollars	2nd Qtr.	51.629	1.5	9.9	NA	NA
Arizona - 1982 Dollars	2nd Qtr.	48.084	1.8	9.7	NA	NA
CONSUMER PRICE INDEX (1977 = 100)						
Metropolitan Phoenix	3rd Qtr.	193.7	0.6	1.2	NA	NA
INDEX OF LEADING ECONOMIC INDICATORS (1977 = 100)						
Arizona	Oct.	109.9	0.3	3.3	NA	NA
BUILDING PERMITS (Total Dollar Value in Thousands)						
Maricopa County	Sept.	325,412	5	0	3,130,621	-2
Pima County	Sept.	51,809	-9	-5	640,028	3
Balance of State	Sept.	65,943	20	-3	486,751	-8
Arizona	Sept.	443,164	5	-1	4,257,400	-2
TOTAL HOUSING UNITS AUTHORIZED						
Maricopa County	Sept.	4,189	26	8	37,548	-10
Pima County	Sept.	811	4	-17	9,174	-7
Balance of State	Sept.	1,134	36	-15	9,328	-29
Arizona	Sept.	6,134	24	-1	56,050	-14
HOME SALES						
Maricopa County - Number	Oct.	4,559	-40	-23	52,353	11
Maricopa County - Median Price	Oct.	78,775	-1.5	5.2	77,950	5.9
HOUSING AFFORDABILITY INDEXES						
Metropolitan Phoenix - New Homes	3rd Qtr.	95	0.0	14.5	NA	NA
Metropolitan Phoenix - Resale Homes	3rd Qtr.	106	-1.9	10.4	NA	NA
MORTGAGE INTEREST RATES (Conventional, 30-year, Fixed-rate)						
Maricopa County	Nov.	9.6	-3.0	-17.2	NA	NA
POPULATION ESTIMATES (In Thousands)						
Maricopa County	3rd Qtr.	1,922	1.1	4.6	NA	NA
Arizona	3rd Qtr.	3,362	0.9	3.9	NA	NA
ELECTRICAL POWER SALES (In Millions of Kilowatt Hours)						
Arizona	Oct.	2,606	-14.8	0.8	30,614	1.1

NA = Not Applicable

Source: Center for Business Research, College of Business, Arizona State University

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Survey of Readers: Migration

60% Might Leave Arizona; Quality of Life Key Factor

Nearly 60 percent of respondents to an *Arizona Business* reader survey would consider moving from Arizona. Quality-of-life considerations would be an unusually significant factor in their decision-making process.

Little information is available concerning why people migrate to Arizona. Even less is known about why people migrate from the state, though in a typical year two people leave for every three who migrate to Arizona. To gather more information on these topics, the Center for Business Research conducted a survey of subscribers to *Arizona Business.*

The survey concentrated on the following issues:

- Whether the respondent had lived outside Maricopa County as an adult.
  - Their reasons for moving to the Phoenix area.
  - A history of their prior intercity moves.
- Whether the respondent would consider leaving Maricopa County.
  - Why they would leave.
  - Where they might move.

Because socioeconomic characteristics typically correlate highly with migration decisions, the survey also included several demographic questions.

DEMOGRAPHICS

Those who returned the survey are not demographically representative of the Phoenix area population. More than 75 percent of the respondents are college graduates; 50 percent earn an annual household income of more than $60,000. More than 80 percent indicated their occupation as executive, manager or professional specialty. Four of five respondents are male.

Many of the demographic characteristics were interrelated, camouflaging those that were truly related to migration decisions. For example, demographic characteristics of migrants to the Phoenix area were

See "Migration," page 2

In This Issue

6 December Purchasing Survey
7 AZ Leading Index, November
8 AZ Economic Indicators

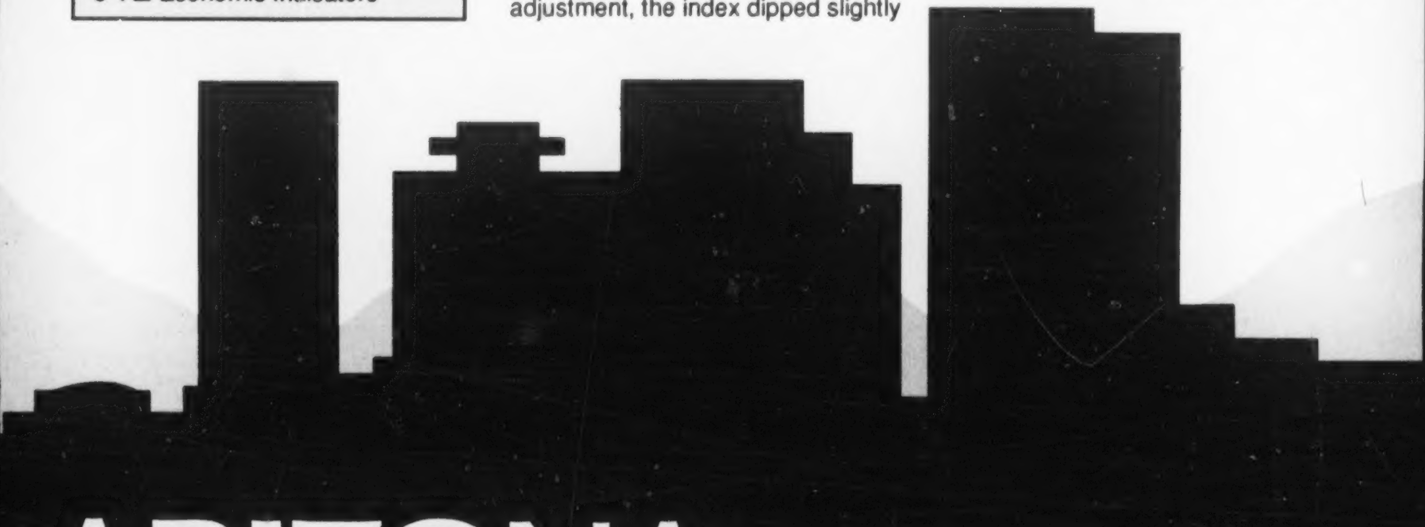
Valley Inflation Finishes Year Near 1 Percent

Inflation in the Phoenix metropolitan area remained subdued during fourth quarter 1986, the sixth consecutive quarter of little or no change in the prices of goods and services. A 0.5 percent seasonally adjusted increase was measured by the Metropolitan Phoenix Consumer Price Index (see Table 1). Before seasonal adjustment, the index dipped slightly to 193.6 (1977 = 100), only 1.1 percent higher than the index for fourth quarter 1985.

COMPONENT INDEXES

None of the major categories inordinately affected the overall index

See "CPI," page 4



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"Migration," from page 1

significantly different from those of respondents who had not lived outside the area as an adult. Thus, varying responses to migration questions were not so much a result of differences in nativity as disparities in income, occupation, education and age.

MIGRATION TO MARICOPA COUNTY

Eighty-three percent of the respondents had lived outside Maricopa County as adults. When they moved to the Phoenix area, 70 percent were married, and 45 percent brought children with them.

Reasons

The decision to move to Maricopa County was most affected by employment-related concerns. An economic motive was cited by 55 percent of the respondents as the single most significant reason, within the 50 to 60 percent range established in most migration studies.

Receiving 16 percent of the responses as the most important reason, climate was far more important in influencing migration to the Phoenix area than to most other areas of the country. With 9 percent of the replies, quality-of-life considerations, such as western lifestyle, health/air quality and outdoor recreation, was the next most popular response.

Survey Methodology

The Center for Business Research mailed surveys to 1,000 readers of *Arizona Business* during the first week of December. The survey was restricted to individuals living in Maricopa County.

Because *Arizona Business* readers are not representative of the general population of the Phoenix area, these results cannot be generalized to the entire population. However, the respondents may be representative of the local business community.

By December 23, 504 responses had been received – an excellent response rate of 50 percent. Thanks to all who participated!

The most important reason varied by the area from which the respondent had moved. Those from the West were not as concerned with climate and quality of life, while the former was a particular concern of Midwest natives, and the latter was more frequently cited by other Easterners.

Frequent movers came here more commonly for economic reasons, while single movers more often cited other motivations. The primary reason for migrating also was related to age and occupation. Older people were more concerned with climate; respondents not in an executive or professional occupation were less concerned with economic reasons and more interested in quality of life.

A tally of all reasons for moving to the Phoenix area revealed that employment was a motivator for nearly two-thirds of all respondents. Climate, cited by more than 40 percent, and quality of life, specified by more than 20 percent, also were popular responses.

Previous Home

Forty-five percent of migrants to the Phoenix area came from another location in the West. Nearly 30 percent migrated from the Northern Plains/Great Lakes region; 16 percent moved from the Northeast, and 10 percent came from the South.

Of the 40 percent of respondents who made only one move – to Phoenix – nearly as many arrived from the Midwest as from the West. Three-or-more intercity moves had been made by 28 percent of the respondents. These frequent movers tend to have higher educational levels and incomes, matching the findings of other migration studies.

Nearly one-half of the migrants came from another large metropolitan area. Los Angeles-Orange County was most frequently named, followed by Chicago. Thirteen percent moved from other locations in Arizona, nearly one-half of these from Tucson.

Time of Move

Nearly 50 percent of respondents moved to the Valley 10-or-more years ago. Only 18 percent have lived here less than five years. Recent arrivals more frequently came from the Rocky Mountain region, less often from the Midwest. This pattern matches the swing in migration reported in the December 1986 *Arizona Business.*

TABLE 1
WILLINGNESS TO LEAVE ARIZONA

	Percent
Total Sample	**59**
Those Who Had Resided Outside Maricopa County as an Adult:	
Yes	**61**
No	**52**
Years Resided in Valley:	
Less than 5	**73**
5 to 9	**66**
10 or more	**51**
Number of Intercity Moves:	
1	**54**
2	**60**
3 or more	**70**
Previous Home:	
West Coast	**68**
Rocky Mountain	**65**
Midwest	**57**
Northeast and South	**54**
Age of Respondent:	
Less than 40	**70**
40 to 54	**59**
55 or older	**39**
Educational Attainment:	
Less than college degree	**50**
College graduate	**54**
Post-graduate work	**67**
Reason for Moving to Valley:	
Economic/employment	**69**
Quality of life	**63**
Climate	**51**
Other	**67**

***Source:* Survey of *Arizona Business* readers conducted by the Center for Business Research, College of Business, Arizona State University, December 1986.**

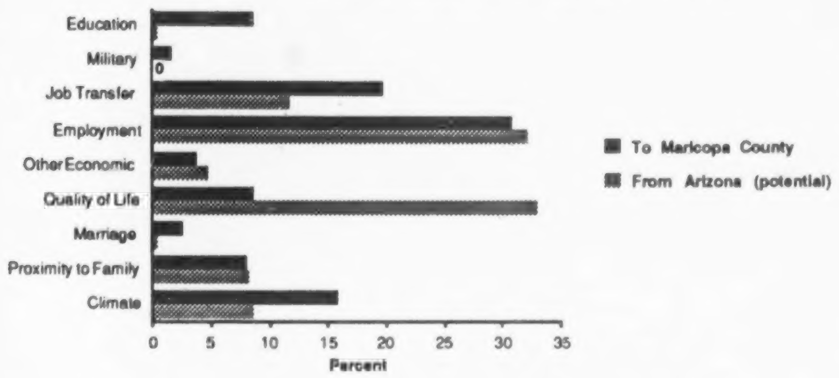
POTENTIAL MIGRATION FROM ARIZONA

While migrants to the Phoenix area are more willing to leave Arizona than those who had not lived outside the Phoenix area as adults, more than one-half of the latter group would consider moving from Arizona. A variety of other factors also correlated significantly with willingness to leave the state (see Table 1).

Reasons

Potential motivations for leaving Arizona do not closely match the reasons given for moving to the Phoenix area (see Figure I). While both decisions still hinge most often on employment-related factors, employment was more frequently chosen

FIGURE I
PRIMARY REASON FOR MIGRATION



Source: Survey of *Arizona Business* readers conducted by the Center for Business Research, College of Business, Arizona State University, December 1986.

as a reason for moving to the Phoenix area. Of potential considerations in a decision to leaveArizona, quality-of-life was surprisingly important to respondents: 33 percent marked it as the most significant potential motivation for leaving; only 9 percent had chosen it as the most important reason for migrating to Phoenix.

Quality of life has become a high priority issue in the Valley, particularly during the last couple of years. A variety of surveys conducted during 1986 revealed citizens' distress about the quality of life. The survey of *Arizona Business* readers indicates that this concern is shared by top-level executives and professionals. Further, many of them find the situation serious enough to leave the area.

Air quality was the most-cited quality-of-life concern, written in by approximately 40 percent of the respondents who checked quality of life as a potential reason for leaving Arizona. Another 25 percent commented on "too many people/too fast growth," while 20 percent of respondents identified traffic congestion in particular. Each of these three-most-named factors is at least partially controllable at the local level. Each also represents a "push" factor – migrants usually are "pulled" to another area rather than "pushed" from their home.

This concern with quality of life is not a typical finding of migration studies. In the *Arizona Business* reader survey, it was more frequently mentioned by long-time residents of the Valley. Presumably, they have been here long enough to contrast conditions today to the way they used to be. Several respondents made rather pointed comments concerning the deterioration of conditions during their residence in the Valley.

Of all reasons given for possibly moving from Arizona, employment was cited by nearly three-fourths of the respondents. Quality of life was noted by 45 percent. Climate and proximity to family each were contributing reasons for nearly one-fourth of those who would consider leaving Arizona.

Destinations

If survey respondents were to leave Arizona, more than one-half would consider living in California. Other popular responses included New Mexico, other Rocky Mountain states and other West Coast states. The West is a particularly favored destination of those who moved to Arizona from a western location and of those who cited quality of life as a potential reason for leaving the state.

Less than 20 percent of respondents indicated they only would move east of the Rocky Mountains. This group generally moved to the Phoenix area from the East and frequently mentioned proximity to family as a reason for moving.

Approximately one-third of those who might leave Arizona are highly flexible as to where they might live. This group frequently cited economic reasons for potentially leaving.

CONCLUSION

Population growth is a fact of life in Arizona, an important part of the social and economic fiber. Migration provides most of the population gains and may be the most important underlying factor affecting Arizona's economy and lifestyle.

While the geographical sources of Arizona's migrants are relatively well documented, and some information is available on migrants' demographic characteristics (see, for example, the July 1985, February 1986 and December 1986 issues of *Arizona Business*), this survey provides new information concerning reasons for migrating, particularly from Arizona.

Some of the most important survey findings include:

- People migrate to Maricopa County, as to most other locations, primarily for employment.
- The desert climate is an unusually strong "pulling" factor for those moving to Arizona.
- Nearly 60 percent of the respondents would consider moving from Arizona.
- While employment remains the most important potential reason for leaving Arizona, the quality of life is an unusually significant "pushing" factor.
- Problems of air pollution, too-rapid growth, and traffic congestion are perceived as so important that they may drive people, including high-level executives and professionals, from the Phoenix area.

– Tom R. Rex
Research Manager

TABLE 1
PERCENT CHANGES IN METROPOLITAN PHOENIX CONSUMER PRICE INDEX

		Seasonally Adjusted from Preceding Quarter							
Expenditure Category	*Relative Importance*	*1st 1985*	*2nd 1985*	*3rd 1985*	*4th 1985*	*1st 1986*	*2nd 1986*	*3rd 1986*	*4th 1986*
ALL ITEMS	100.0	1.6	1.3	0.3	0.6	-0.2	0.4	0.6	0.5
Food and Beverages	18.7	1.6	0.9	-0.1	2.3	0.5	1.0	2.3	0.1
Housing	39.5	1.2	0.6	1.8	-0.4	0.7	0.2	1.0	0.4
Apparel and Upkeep	4.8	1.8	3.3	-1.9	2.5	-3.3	5.6	-2.5	1.9
Transportation	21.2	2.0	2.0	-2.1	-0.6	-2.5	-1.9	-1.1	-0.2
Medical Care	6.9	2.6	2.7	1.6	1.8	1.3	1.7	0.2	1.2
Entertainment	4.6	2.9	3.5	2.1	5.3	-1.7	2.4	-0.6	4.5
Other Goods and Services	4.3	1.7	1.7	-0.2	1.2	1.7	0.7	2.1	0.6

TABLE 2
METROPOLITAN PHOENIX CONSUMER PRICE INDEX
Fourth Quarter 1986

	Index (1977=100)		Percent Change from	
Expenditure Category	*Last Quarter*	*This Quarter*	*Last Quarter **	*Year-Ago Quarter*
ALL ITEMS	193.7	193.6	0.5	1.1
Food and Beverages	181.1	180.2	0.1	3.7
Food	181.5	180.5	0.0	3.7
Food at Home	179.3	178.2	0.1	4.2
Cereal and Bakery Products	197.2	197.5	0.7	4.8
Meats, Poultry, Fish, and Eggs	166.5	166.9	-0.1	6.6
Dairy Products	166.4	165.7	-0.8	3.3
Fruits and Vegetables	191.3	184.1	-1.3	-3.4
Other Food at Home	170.8	170.7	1.5	6.7
Food Away from Home	182.8	182.1	-0.1	2.8
Housing	205.1	203.6	0.4	2.3
Shelter	222.5	222.1	-0.1	3.1
Renters' Costs**	120.3	119.3	-1.0	2.5
Homeowners' Costs**	111.9	112.1	0.2	3.5
Fuel and Other Utilities	173.4	168.5	3.0	0.0
Gas (piped) and Electricity	192.8	181.2	3.5	-0.9
Household Furnishings/Operations	153.5	152.3	-0.2	1.0
Apparel and Upkeep	146.8	149.8	1.9	1.2
Transportation	176.0	175.0	-0.2	-5.9
Private Transportation	172.7	171.7	-0.4	-5.9
New and Used Cars	193.3	194.8	2.3	2.4
Motor Fuels	134.1	128.8	-4.0	-32.0
Public Transportation	228.7	228.4	1.7	-6.4
Medical Care	269.7	272.2	1.2	4.2
Entertainment	194.3	206.1	4.5	4.5
Other Goods and Services	181.7	182.2	0.6	5.0

*Seasonally adjusted **Base period is second quarter 1983.

TABLE 3
METROPOLITAN PHOENIX CONSUMER PRICE INDEX UNITED STATES AND COMPARATIVE CITIES
Fourth Quarter 1986

	Percent Change from Last Quarter*		Percent Change from One Year Ago			
Expenditure Category	*Phoenix*	*United States*	*Phoenix*	*United States*	*Denver*	*San Diego*
ALL ITEMS	0.0	0.7	1.1	1.3	0.5	2.2
Food and Beverages	-0.5	0.6	3.7	4.2	2.5	5.2
Housing	-0.7	-0.2	2.3	1.9	0.2	3.6
Apparel and Upkeep	2.1	2.9	1.2	0.9	2.9	1.8
Transportation	-0.6	1.0	-5.9	-5.8	-5.6	-5.9
Medical Care	0.9	1.6	4.2	7.7	6.1	9.7
Entertainment	6.1	1.0	4.5	3.1	4.1	4.2
Other Goods and Services	0.2	2.5	5.0	5.8	9.3	3.8

*Not seasonally adjusted

Source (Tables 1, 2 and 3): Metropolitan Phoenix data compiled by the Center for Business Research, College of Business, Arizona State University, in cosponsorship with Valley National Bank; other data in Table 3 are from the U.S. Department of Labor, Bureau of Labor Statistics.

"CPI," from page 1

during the fourth quarter. Transportation costs fell for the sixth consecutive quarter, but by a slight amount. The entertainment category provided the largest upward impetus. Each of the other major components registered small-to-moderate gains.

Food and Beverages

The index for food and beverages barely rose during the fourth quarter, following a large gain in the third quarter. At 0.1 percent, the increase was the smallest of the last five quarters. Both the food at home and food away from home subcategories changed minimally.

Three of the five components of the food at home category declined, led by a 1.3 percent drop in the index for fruits and vegetables. This index was lower than it was one year earlier, largely because fresh fruit prices fell 20 percent during the year.

Prices of dairy products also were lower. The index for meats, poultry, fish and eggs hardly changed – a return to the pattern interrupted by a jump during the third quarter. Price increases for cereal and bakery products and for other food at home (see Table 2) offset the declines.

Housing

Housing costs rose only 0.4 percent, as shelter costs declined slightly for the first time in more than three years. Homeowners' costs increased minimally, while renters' costs fell. Apartment rents declined slightly, following a surprisingly large gain during the third quarter. High vacancy rates should continue to restrain rent increases.

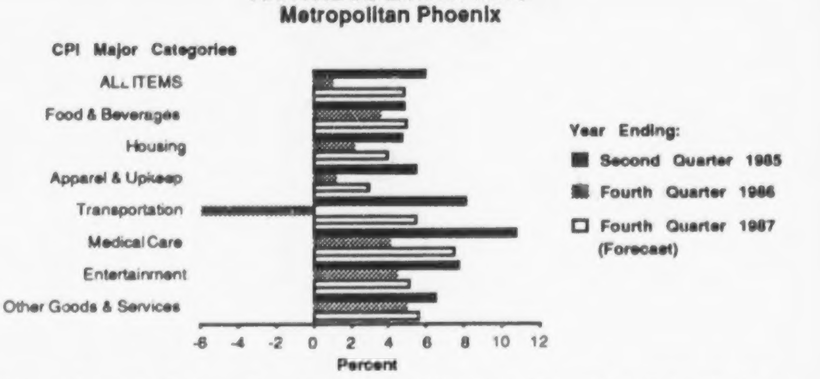
Fuel and utility costs advanced, as utility gas rates failed to decline after eight consecutive quarterly reductions. Sharp rate increases went into effect in some Valley areas for water and sewerage maintenance and for trash collection.

Transportation

Because gasoline prices declined for the sixth straight quarter, transportation costs again fell, though by only 0.2 percent. Gasoline prices were 32 percent lower during fourth quarter 1986 than during fourth quarter 1985.

Most of this decrease was offset by higher new car prices, which

FIGURE I
ANNUAL INFLATION RATE
Metropolitan Phoenix



Source: Center for Business Research, College of Business, Arizona State University, in cosponsorship with Valley National Bank.

followed three quarters of price stability in this category. Used car prices again advanced modestly.

After six straight large increases, vehicle insurance rates did not rise. Vehicle finance charges dipped slightly; only one increase was measured during the last nine quarters. The index for public transportation climbed but stayed well below its level of one year earlier.

Medical Care

Health care inflation remained moderate for the sixth consecutive quarter, though the 1.2 percent increase represented a rebound from the 0.2 percent rate of the third quarter. Compared to fourth quarter 1985, the fourth quarter 1986 medical care index was just 4.2 percent higher: the lowest annual rate since the quarterly CPI began in 1975.

Inflation was consistent throughout the category, except for health insurance premiums, which scarcely changed. After an annual rate approachng 50 percent during 1984, inflation in this category has stabilized near 2 percent.

Other Categories

The apparel and upkeep category continued its up-and-down quarterly pattern, while the other goods and services grouping again advanced moderately. Entertainment costs jumped 4.5 percent, as prices of toys and hobbies surged after three straight quarterly declines. In addition, admission prices and fees for participant sports again shot up; the cumulative gain during the four quarters of 1986 exceeded 8 percent.

COMPARISON AREAS

The fourth quarter inflation rate in the Phoenix metropolitan area was less than the national average in every major category except entertainment (see Table 3).

Compared to one year earlier, the Phoenix inflation rate was comparable to the national rate in most categories. Exceptions included medical care, for which the local rate was lower, and entertainment, for which the Valley's rate was slightly higher.

The Phoenix area's annual inflation rate was bracketed by those in the nearby, comparably sized, metropolitan areas of Denver and San Diego. Only in the medical care category was the Valley's rate much different (lower) than in San Diego and Denver.

OUTLOOK

The inflation outlook scarcely has changed during the last six months. The fourth quarter rate was almost exactly as predicted, except that gasoline prices continued to fall; stable prices had been expected. These lower gasoline prices alone reduced the quarterly inflation rate by 0.2 percentage points.

A gradual acceleration in the inflation rate remains likely, with a year-over-year rate near 5 percent by the end of 1987. Starting from such a low base (an annual rate of 1.1 percent at the end of 1986), however, the annual average increase during 1987 should be just 3.5 percent.

At the end of 1986, each major category registered an inflation rate of 5 percent or less, lower in all cases than the peak rates reached during early 1985 (see Figure I). The transportation and medical care components experienced the sharpest decelerations. Higher 1987 inflation is foreseen for each category, with the fastest acceleration probably to occur in transportation costs.

While gasoline prices are not predicted to shoot up during 1987, a swing from the 32 percent decrease during 1986 to just a 5 percent rise during 1987 would add two percentage points to the overall inflation rate. Recent action by OPEC, which forced up the price of crude petroleum, is the first tangible sign of higher consumer prices.

At a 4 percent annual rate of inflation, prices would double in 18 years. This rate still would represent considerable improvement over the inflation of the 1970s and early 1980s.

– Tom R. Rex
Research Manager

New Directors Named

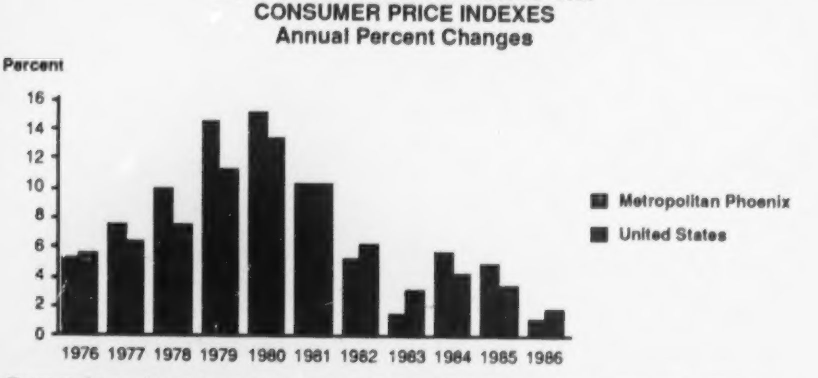
Timothy D. Hogan, professor of economics and research associate in the Center for Business Research, has been appointed acting director of the Center. He assumed the position January 1, the date former Center director Lee R. McPheters, professor of economics, became acting director of the new Economic Outlook Center.

The latter Center is now the forecasting unit of the College of Business. It will serve the public by providing economic forecasts and related programs. Center activities will complement the research program of the Center for Business Research, offering research opportunities for students and faculty.

Under an agreement with Robert J. Eggert, Sr., of Sedona, Ariz., creator and editor of *Blue Chip Economic Indicators*, the Economic Outlook Center will assume publication of *Arizona Blue Chip*, a monthly newsletter on the Arizona economy. Other services the new Center will offer include consensus forecasts for the eight Western states, detailed Arizona forecasts, and a seminar series.

For more information on the Economic Outlook Center, call (602) 965-3961.

FIGURE I
METROPOLITAN PHOENIX AND U.S. CONSUMER PRICE INDEXES
Annual Percent Changes



Source: Center for Business Research, College of Business, Arizona State University, in cosponsorship with Valley National Bank.

TABLE 1
METROPOLITAN PHOENIX CONSUMER PRICE INDEX
Annual Average, Selected Items

Expenditure Category	*1986 Relative Importance*[1]	*1986 Index (1977 = 100)*	Percent Change		
			1986	*1985*	*1984*
ALL ITEMS	100.0%	192.9	1.3	5.0	5.8
Food and Beverages	18.7	179.0	4.2	4.3	3.5
Food	17.5	179.3	4.0	4.3	3.6
Food at Home	11.3	176.8	4.1	4.1	3.1
Cereal and Bakery Products	1.5	196.7	5.8	7.6	6.0
Meats, Poultry, Fish, and Eggs	3.3	162.1	2.5	1.1	1.3
Dairy Products	1.5	164.3	2.7	3.3	1.3
Fruits and Vegetables	1.9	188.1	1.7	6.3	5.6
Other Food at Home	3.1	170.3	6.8	4.5	3.1
Food Away from Home	6.1	181.2	3.8	4.8	4.4
Housing	39.5	202.8	2.2	4.5	4.1
Shelter	25.8	220.0	3.5	5.2	4.2
Renters' Costs	8.5	118.1[2]	2.8	5.9	NA
Homeowners' Costs	16.5	111.0[2]	3.8	4.3	NA
Fuel and Other Utilities	6.4	169.6	-2.0	1.8	7.4
Gas (piped) and Electricity	4.0	184.2	-3.7	1.6	6.2
Household Furnishings/Operations	7.2	153.5	1.4	4.4	1.5
Apparel and Upkeep	4.8	148.1	1.5	3.8	3.8
Transportation	21.2	177.5	-5.6	5.4	7.3
Private Transportation	19.6	174.3	-5.7	5.5	7.1
New and Used Cars	7.3	192.3	-1.2	4.2	13.4
Motor Fuels	5.5	148.8	-25.1	3.0	1.7
Public Transportation	1.8	228.8	-4.7	2.7	9.7
Medical Care	6.9	269.0	5.7	10.0	19.3
Entertainment	4.6	198.1	6.8	10.0	5.8
Other Goods and Services	4.3	179.2	4.6	5.4	6.4

[1] Expressed as a percent of all items. The relative importance of the seven major categories sums to 100.0 percent. Only selected detail items are shown; thus, the relative importance of these items will not sum to that of the major categories.

[2] Second quarter 1983 = 100

NA = Not Available

Source: Center for Business Research, College of Business, Arizona State University; in cosponsorship with Valley National Bank.

equal to that of the two next-largest categories combined (transportation; food and beverages). Its index advanced less during 1986 than in any year except 1983.

Shelter costs rose modestly as apartment rents posted their smallest gain of the 1980s. The index for household furnishings and operations registered the smallest gain on record, while fuel and utility costs declined for the first time. Electricity rates were flat, and piped gas rates fell.

Transportation

In addition to gasoline prices, several other components of this category declined during 1986. Used car prices fell for the first time since 1979, and public transportation costs dropped for the first time ever. Lower finance charges and less expensive vehicle maintenance and repair contributed to the decline, offsetting a 20 percent increase in vehicle insurance premiums.

Medical Care

Health care inflation slowed to 5.7 percent, the slowest pace on record. In six of the seven prior years, the medical care index climbed at double-digit rates. The improvement in 1986 resulted primarily from inflation in health insurance premiums nearly disappearing.

Other Categories

Entertainment price increases slowed from the 1985 pace but remained the largest of the seven major categories. Gains in apparel and upkeep prices were less than in 1984 and 1985. The same was true in the other goods and services category.

COMPARISON AREAS

The increase during the 1980s in the Metropolitan Phoenix CPI has been nearly identical to the gain in the national CPI. A bigger decline in transportation costs and a smaller increase in medical care costs caused the 1986 inflation rate in Phoenix to be slightly less than the national rate (see Table 2).

The overall inflation rate for the Phoenix area was comparable to that for the Denver area, though the rates of increase by category varied substantially. San Diego's inflation rate was higher, mostly because of a more rapid rise in housing costs.

1986 FORECAST ACCURACY

Last year at this time, nearly all forecasts of 1986 national inflation exceeded 2.5 percent. In large part due to the unexpected collapse of oil prices, inflation slowed to only 1.9 percent.

The Center's forecast of the metropolitan Phoenix inflation rate was far too high. While the greatest error

December Purchasing Indicators Register Slim Gains

The Arizona economy continued its upward movement in December, but it was hardly a bullish performance. Price hikes continued to be moderate; inventory levels remained static; new order receipts were up, but at a rate well under the earlier months of 1986; production increased, but at the smallest rate since summer; and employment fell, for the second month in a row. The economy finished its fourth year of expansion with only slim increases.

As it moves into its fifth year of expansion, the economy's growth curve has flattened, and there is little evidence that the expansion will become more robust in 1987. Prices may increase at a faster rate, since they are unlikely to enjoy downward pressure from anything like the energy price windfall experienced in 1986. While the falling dollar should begin to stimulate exports and reduce imports, the statistical evidence does not show that happening yet. Without such an improvement, growth could stall by early summer. The effects of the new tax bill still are uncertain; if it results in a step-up of consumer spending, more upward thrust could develop. The anticipated capital expenditures also would provide a good boost to the economy. In short, continuation of the moderate growth of the past year is likely in 1987.

Table 1 presents the results of the December survey of Arizona purchasing managers. Analysis of these results follows.

PRICES

Prices paid for purchased items increased at the same rate as in November. The increase rate for each month of the second half of the year was consistently higher than during the first half. While the Arizona economy continues to enjoy a relatively modest inflation rate, it has stepped up from that experienced during 1985. However, these modest increases are not likely to cause any major problems.

DELIVERY TIME

Delivery time on shipments from vendors stretched at the same rate as in the past three months, showing that vendor order books remain healthy.

INVENTORY LEVELS

Inventory levels of purchased materials were unchanged, following a decrease in November. Over the year, inventory levels have held almost steady, with an equal number of months of additions and drops. If the Arizona economy should start to grow at a greater pace during first quarter 1987, needed additions to inventory could provide a real kick to an upswing.

NEW ORDERS

New orders received by Arizona firms grew in December at a greater rate than November's lackluster performance. The December increase still was lower than in all but two other months of 1986, with a noticeable slowing in the last half of the year.

PRODUCTION

Production advanced, but at a smaller rate than in November and at the lowest rate since June. The relatively small production gains are in line with the modest new order increases.

TABLE 1
DECEMBER PURCHASING SURVEY

	Percent of Purchasing Managers Indicating Each Response (December compared to November)		
Key Indicators	*Higher*	*Same*	*Lower*
Prices paid for major commodities	24	72	4
Delivery time from vendors	31	56	13
Purchased materials inventory level	29	42	29
New orders received	35	40	25
Production	33	41	26
Employment	14	68	18
Purchases	41	32	27

Source: Purchasing Management Association of Arizona and the Purchasing Management Association of Southern Arizona.

TABLE 2
ANTICIPATED EXPENDITURES
FOR NEW PLANT AND EQUIPMENT

	Percent of Purchasing Managers Indicating Each Response		
	Higher	*Same*	*Lower*
1987 compared to 1986	53	34	13
1986 compared to 1985	48	33	19
1985 compared to 1984	53	28	19
1984 compared to 1983	53	31	16
1983 compared to 1982	27	26	47
1982 compared to 1981	40	19	41
1981 compared to 1980	49	27	24

Source: Purchasing Management Association of Arizona and the Purchasing Management Association of Southern Arizona.

Arizona Purchasing Survey

Now in its 25th year of monthly reporting, Dr. Harold Fearon's survey of Arizona business conditions utilizes data from a questionnaire sent to members of the purchasing management associations of Arizona and southern Arizona. It asks them to indicate the direction of activity - higher, unchanged, or lower - of seven key measures of economic activity in the month just ended. These purchasing managers deal daily with supply, demand, and price factors in the marketplace; their aggregate readings have accurately charted the state's economic course for two decades, providing timely data on turning points.

EMPLOYMENT

Employment declined slightly again in December, for the second consecutive month. This indicator has decreased slightly in three of the past four months, as the growth plateau continues.

PURCHASES

Purchases of materials and supplies went up in December at a somewhat greater rate than in November.

CAPITAL EXPENDITURE PLANS

Each December, survey respondents are asked a special question concerning their *anticipated* expenditures for new plant and equipment the following year (Table 2). The responses indicate that expenditures in 1987 will be substantially higher than in 1986, a year of consistent, although moderate, expansion. The planned expenditure level for 1987 is the highest of the past four years. Evidently, Arizona firms feel that the upward economic movement will continue and intensify in the new year and that additional productive capacity will be needed. If this capital investment is actually realized, it will be a major factor in bringing new life to the fifth year of expansion.

– Harold Fearon

Dr. Fearon is the National Association of Purchasing Management Professor in the ASU College of Business.

Arizona Leading Index Unchanged Again in November

TABLE 1
NET CONTRIBUTION OF INDIVIDUAL COMPONENTS TO THE ARIZONA INDEX OF LEADING ECONOMIC INDICATORS

	Net Contribution+			
	Aug.	*Sept.*	*Oct.*	*Nov.*
Delivery Time*	-.02	-.02	.07	.03
Inventory Levels*	.04	-.04	.06	-.14
New Orders*	-.04	.09	-.05	-.17
Production*	.04	.00	.01	.03
Employment*	.00	-.11	.07	-.01
Residential Building Permits	-.07	.16	-.34	-.16
Unemployment Insurance Claims	.12	-.12	-.05	.13
Average Workweek, Manufacturing	-.05	.00	.07[r]	-.07
Money Supply	.35	.12	.34	.13
Change in Sensitive Materials Prices	-.16	-.09	.16	.28
OVERALL INDEX	.21	.00	.34[r]	.06

[r] Revised

+The net contribution of each component is calculated by multiplying the monthly percent change in its index by its relative importance.

*Based on indicators from the purchasing management associations of Arizona and southern Arizona.

Source: Center for Business Research, College of Business, Arizona State University.

For the second time in three months, the Arizona Index of Leading Economic Indicators remained constant. Following a slight upward revision to the October index, the November index stayed at a record high 110.0 (1977 = 100).

Even with this flattening, growth of the index continued to be more vigorous than during 1984-85, when declines were common. Between November 1985 and November 1986, the index advanced 3.7 percent, the largest 12-month change since early 1984.

One-half of the index components rose in November, led by the second successive sizable gain in sensitive materials prices. Despite these increases, the index for this component remained below its April 1983 cyclical peak, which was lower than every other cyclical high since the leading index began in 1970. Thus, sharply higher inflation should not be interpreted from the growth of this component. Rather, it indicates a return to the 4 percent inflation rate experienced between 1982 and early 1986.

Other upward influences on the leading index included the 10th consecutive increase in national money supply (M2), though a relatively small gain, and a decline in the number of first-time unemployment insurance claims.

Offsetting these factors, residential building permits fell substantially for the second consecutive month. In addition, net change in the five components derived from a survey of Arizona purchasing managers was negative, wiping out a positive change in October.

These purchasing-survey components continued to fluctuate with little trend, though they were slightly higher than in early 1985, after they had retreated through most of 1984. The new orders component, however, fell in November to its lowest level since the end of the 1982 recession. In December, seasonally adjusted, these components were unchanged, with gains in inventory levels and new orders offset by declines in the other components.

OUTLOOK

The chance of a recession beginning in Arizona before fall 1987 is less than 3 percent. Healthy economic growth should persist.

Nationally, the leading index rebounded in the fall from its sluggish summer level, a pattern of growth different from that in Arizona. The national index rose 6.4 percent between November 1985 and November 1986, suggesting real GNP growth in excess of 4 percent during 1987. However, following years of accurately predicting GNP growth (see August 1985 *Arizona Business*), the leading index was less reliable last year. It predicted approximately 4 percent real GNP growth during 1986, while the latest estimate is close to the 2.7 percent gain of 1985.

Thus, while an interpretation of much stronger economic growth for 1987 cannot be confidently made from the leading index, it is safe to conclude that an economic collapse is highly unlikely.

– Tom R. Rex
Research Manager

ARIZONA ECONOMIC INDICATORS

	Month or Quarter	Value	Percent Change from Previous Period	Percent Change from Year Ago	Year-to-Date	
					Value	Percent Change from Year Ago
GROSS STATE PRODUCT (In Billions of Dollars, at Annual Rate)						
Arizona - Current Dollars	2nd Qtr.	51.629	1.5	9.9	NA	NA
Arizona - 1982 Dollars	2nd Qtr.	48.084	1.8	9.7	NA	NA
CONSUMER PRICE INDEX (1977 = 100)						
Metropolitan Phoenix	4th Qtr.	193.6	-0.1	1.1	NA	NA
INDEX OF LEADING ECONOMIC INDICATORS (1977 = 100)						
Arizona	Nov.	110.0	0.0	3.7	NA	NA
BUILDING PERMITS (Total Dollar Value in Thousands)						
Maricopa County	Oct.	329,379	1	0	3,460,000	-2
Pima County	Oct.	51,229	-1	-7	691,257	2
Balance of State	Oct.	102,609	55	82	589,360	0
Arizona	Oct.	483,217	9	8	4,740,617	-1
TOTAL HOUSING UNITS AUTHORIZED						
Maricopa County	Oct.	2,839	-32	-49	40,387	-15
Pima County	Oct.	1,427	75	23	10,601	-4
Balance of State	Oct.	983	-13	-21	10,311	-28
Arizona	Oct.	5,249	-14	-34	61,299	-16
HOME SALES						
Maricopa County - Number	Nov.	4,588	0	15	56,941	11
Maricopa County - Median Price	Nov.	79,000	0.3	4.9	78,000	5.6
HOUSING AFFORDABILITY INDEXES						
Metropolitan Phoenix - New Homes	3rd Qtr.	95	0.0	14.5	NA	NA
Metropolitan Phoenix - Resale Homes	3rd Qtr.	106	-1.9	10.4	NA	NA
MORTGAGE INTEREST RATES (Conventional, 30-year, Fixed-rate)						
Maricopa County	Dec.	9.2	-4.2	-16.4	NA	NA
POPULATION ESTIMATES (In Thousands)						
Maricopa County	3rd Qtr.	1,922	1.1	4.6	NA	NA
Arizona	3rd Qtr.	3,362	0.9	3.9	NA	NA
ELECTRICAL POWER SALES (In Millions of Kilowatt Hours)						
Arizona	Nov.	2,427	-6.9	-3.6	33,041	0.8

NA = Not Applicable

Source: Center for Business Research, College of Business, Arizona State University

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Metro Phoenix Home Appreciation

Townhouses Lag Single Family Homes

The median rate of appreciation for single family homes in the Phoenix metropolitan area remained near 3 percent in 1986, fractionally less than in 1984 and 1985. For townhouses and condominiums (hereafter referred to as townhouses), the appreciation rate is available for the first time. At 1.3 percent in 1985 and 0.7 percent in 1986, townhouses appreciated at less than one-half the rate for single family homes.

Of all homes sold more than once between 1981 and 1986, 22,265 constitute the single family data base; 75 percent of these homes gained in price. Another 1,973 homes make up the townhouse data base; of these, only 61 percent recorded a price increase. Throughout this article, less detail is provided on townhouses because of their relatively small number.

HOUSING APPRECIATION 1981-86

The appreciation rate for single family homes has been nearly stable since late 1982, though a slight downward trend is now evident (see Figure I). In contrast, the townhouse appreciation rate has decelerated more sharply since early 1984.

Between 1983 and 1986, the appreciation rate did not keep up with inflation in consumer prices (see Table 1). While increases in median sales price measures, even for

See "Appreciation," page 2

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'86 Valley Home Sales Set Record for '80s

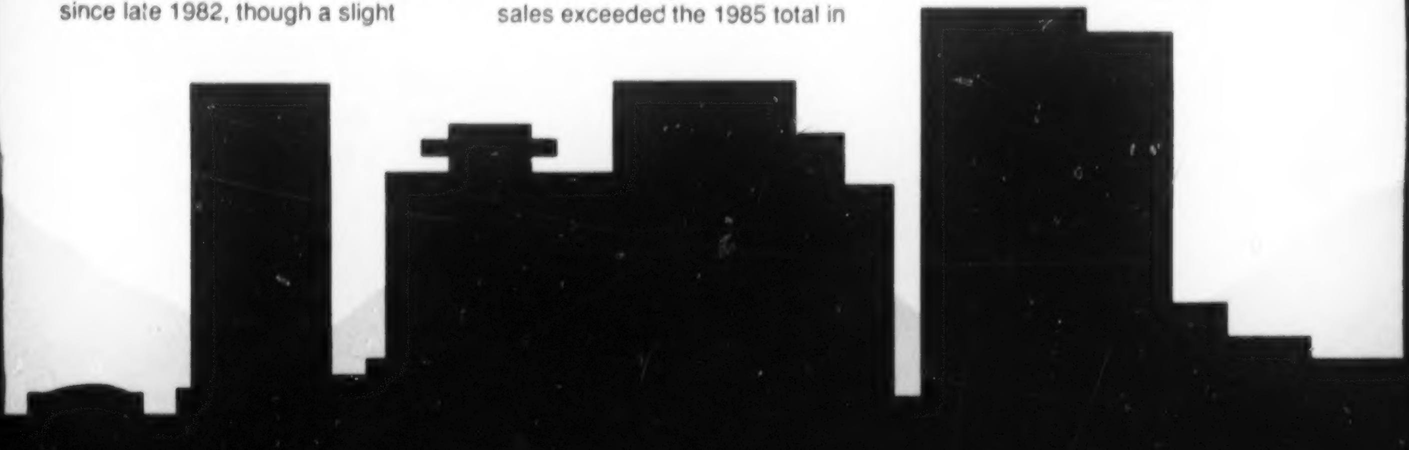
The number of homes sold in the Phoenix metropolitan area during 1986 soared 13 percent past the 1985 level to 63,510. Improved affordability (see page 5), primarily due to falling mortgage interest rates, spurred sales, particularly during the third quarter.

Sales during the fourth quarter dropped 19 percent from the third quarter record, though the seasonally adjusted decline was only 11 percent. Sales in each subcategory decreased.

For the entire year, the number of sales exceeded the 1985 total in each category except new single family homes (see Table 1). Fewer sales were recorded in this category than during 1983, 1984 and 1985. New townhouse and condominium sales rose slightly from the low 1985 level but did not reach the 1984 total.

Sales of existing homes, both single family and townhouse/condominium, set records. The latter experienced a large increase from the depressed level of 1985.

See "Home Sales," page 4



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"Appreciation," from page 1

townhouses, exceeded the appreciation and inflation rates, the higher rates resulted from a disproportional gain in sales of larger homes. After adjusting for the size of existing single family homes sold, the increase in the median sales price per square foot approximated the appreciation rate.

By Price

The strongest influence on the rate of appreciation is home price. Homes that sold for more than $100,000 appreciated more than twice as much as those that sold for less than $60,000, a significant difference for both single family homes and townhouses. This relationship between appreciation and price holds after adjusting the sales price by the size of the home. Single family homes that sold for a price per square foot in excess of $53 appreciated 1.0 percent per quarter, compared to a rate of 0.6 percent per quarter for less expensive homes.

A closer look at the relationship between single family home price and appreciation reveals that new homes that sold for approximately $115,000 had the peak rate of appreciation. The rate for new homes that sold for more than $150,000 was no higher than for those that sold for $80,000 to $90,000. For resale homes, the appreciation rate stabilized at 1 percent per quarter for homes that sold for more than $110,000.

New vs. Resale Homes

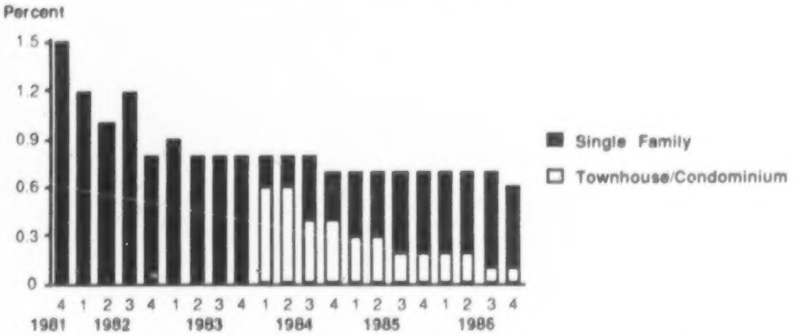
While a "new" single family home – defined as one built and later resold between 1981 and 1986 – appreciated faster than an existing home in all price ranges, the difference is largely illusory. The more rapid appreciation rate of new homes – nearly double the rate of resale homes – lasted only until the first resale of the home. At least a portion of the gain reflects additional expenses that most buyers of new homes incur in making improvements, such as landscaping, which add to the value of the property. Further, new homes generally are more expensive than resale homes, even on a price-per-square-foot basis. Thus, new homes appreciate faster mainly because of improvements and higher prices.

In contrast to single family homes, new townhouses appreciated moderately faster than resale townhouses; the differential relates to a smaller difference in price between new and existing townhouses. The wide differential in the appreciation rates of townhouses and single family homes is partially explained by lower prices of townhouses. Other factors, however, such as relatively low demand for townhouses, probably better explain the difference.

By Geographic Area

Housing appreciation rates vary throughout the Valley (see Table 2), but most of the deviation can be explained by price and the proportion of new homes. While the 1981-86 appreciation rate in a number of districts was significantly different from the metro total in a statistical sense, the difference usually was slight in a practical sense. The annualized rate was between 2 and 4 percent in all districts except Sun City West.

FIGURE I
MEDIAN RATE OF METRO PHOENIX HOME APPRECIATION
By Quarter of Last Sale



Note: Data for townhouse/condominium category are not available prior to 1984.

Source: Center for Business Research, College of Business, Arizona State University

TABLE 1
INFLATION MEASURES

	Percent Change				
	1983	*1984*	*1985*	*1986*	*1983-86 Total**
Metropolitan Phoenix Consumer Price Index	1.6	5.8	5.0	1.3	14.3
U.S. Consumer Price Index	3.2	4.3	3.6	1.9	13.6
Phoenix Area					
All single family homes:					
Appreciation rate	3.6	3.2	2.9[r]	2.8	13.1
Median sales price	4.8	6.3	4.0	6.0	22.9
New single family homes:					
Appreciation rate	5.7	4.7	4.8[r]	4.2	20.9
Median sales price	6.0	9.9	8.1	7.4	35.2
Existing single family homes:					
Appreciation rate	2.9	2.7	2.6[r]	2.4	10.8
Median sales price	4.6	4.8	3.2	6.1	20.0
Median sales price per square foot	2.9	3.0	2.2	3.5	12.2
All townhouses and condominiums:					
Appreciation rate	NA	NA	1.3	0.7	NA
Median sales price	1.8	8.8	1.0	3.5	15.6

*Calculated at a compound rate

NA: Not available

[r] Revised

Source: Center for Business Research, College of Business, Arizona State University. U.S. Consumer Price Index is from the U.S. Department of Labor, Bureau of Labor Statistics.

The highest appreciation rates occurred in the newer, more expensive districts of North Scottsdale and Paradise Valley and in retirement areas: East Mesa, Sun City and Sun City West. The lowest appreciation rates were measured in older and/or less expensive areas of Phoenix, including Maryvale, Christown and Metrocenter. In South Tempe and Glendale, the rates were anomalies, lower than expected in all price ranges and housing types, more from an infrequency of homes with high appreciation rates than from homes that depreciated in value.

TABLE 2
MEDIAN RATE OF METRO PHOENIX HOME APPRECIATION
By Geographic District, Per Quarter, Single Family Only

	Median Percent Change Per Quarter				
District	*1981-83*	*1984*	*1985*[r]	*1986*	*1981-86*
North Scottsdale	0.9	0.9	1.2	0.9	0.9[H]
South Scottsdale	0.7	0.7	0.6	0.6	0.6
Paradise Valley	1.3	1.0	0.9	0.7	0.9[H]
North Sunnyslope/Moon Valley	0.7	0.7	0.6	0.6	0.7[L]
Northwest Phoenix	0.9	0.8	0.6	0.6	0.6[L]
Metrocenter	0.4	0.6	0.6	0.4	0.5[L]
Sun City/Youngtown/Peoria	1.2	1.3	0.9	0.9	1.0[H]
Glendale	0.8	0.7	0.6	0.5	0.6[L]
Christown	0.5	0.5	0.5	0.5	0.5[L]
North Central Phoenix	0.6	1.0	1.1	0.7	0.8
East Camelback	0.6	1.0	0.9	0.7	0.8
East Central Phoenix	0.6	1.1	0.5	0.8	0.7
Mid-town Phoenix	0.5	0.8	1.1	0.8	0.8
West Central Phoenix	0.7	0.7	0.7	0.6	0.7
Maryvale	0.5	0.5	0.5	0.4	0.5[L]
Downtown/South Central Phoenix	0.0	1.0	0.2	0.7	0.5
South Phoenix	0.8	1.1	0.7	0.9	0.9[H]
North Tempe	0.7	0.2	0.7	0.8	0.7
South Tempe	0.7	0.5	0.7	0.6	0.6[L]
North Mesa	1.0	0.5	0.6	0.8	0.8
South Mesa	0.9	1.0	0.9	0.7	0.8[H]
East Mesa	1.2	0.9	0.9	0.9	0.9[H]
Chandler/Gilbert	0.9	0.9	1.1	0.9	0.9[H]
Western Suburbs	1.2	0.6	1.0	0.6	0.8
Deer Valley	1.0	0.7	0.6	0.6	0.6[L]
Sun City West/Rural Maricopa Co.	1.6	2.2	2.5	1.7	2.2[H]
TOTAL, METROPOLITAN PHOENIX	0.8	0.8	0.7	0.7	0.7

[H] The mean associated with this median is significantly higher than the mean for all of metropolitan Phoenix.

[L] The mean associated with this median is significantly lower than the mean for all of metropolitan Phoenix.

[r] Revised

Source: Center for Business Research, College of Business, Arizona State University. District designations are copyrighted by the Maricopa County Housing Study Committee.

TABLE 3
COMPARISON OF TOWNHOUSE/CONDOMINIUM TO SINGLE FAMILY HOME APPRECIATION
By Combined Geographic District, Per Quarter, 1981-86

	Median Percent Change Per Quarter	
District	*Single Family*	*Townhouse/Condominium*
North Scottsdale/Paradise Valley	0.9	0.6
South Scottsdale	0.6	0.2
North Central Phoenix	0.7	0.0
Northwest Phoenix	0.6	0.1
Sun City/Youngtown/Peoria	1.0	0.6
Glendale	0.6	0.2
West Phoenix	0.5	-0.2
East Central and South Phoenix	0.8	0.3
Tempe	0.7	0.2
Southeast Valley	0.9	0.4
West Valley	1.2	1.3
North Valley	0.6	0.3

Source: Center for Business Research, College of Business, Arizona State University

Between 1981 and 1986, the appreciation rate in most districts ranged from steady to declining modestly, similar to the slight deceleration measured Valleywide. In several districts, the rate was erratic from year to year, but this largely results from few homes reselling. The most significant trend occurred in Paradise Valley, where the rate slowed from the second-fastest in 1981-83 to the metro area median in 1986.

The small number of townhouses that sold more than once prevented using a detailed geographic division (see Table 3). Except in the West Valley, where townhouse sales occurred predominantly in Sun City West, the appreciation rate of townhouses was less than that of single family homes. The geographic pattern was similar for townhouses and single family homes.

OUTLOOK

After the aberrations of the 1970s, the residential housing market has returned to the stable conditions of preceding decades. The general inflation rate, housing affordability and supply-demand relationships remain relatively steady. Thus, continuing the pattern of the last few years, little change in the rate of appreciation for single family homes is likely during 1987. With the price of, and demand for, townhouses recovering somewhat in 1986 from the 1985 slump, their appreciation rate may accelerate slightly during 1987.

– Jay Q. Butler
– Tom R. Rex
Research Manager

Dr. Butler is Associate Professor of Real Estate and Director of the Arizona Real Estate Center in the ASU College of Business.

Complete Report Available

This article summarizes a more detailed report on the appreciation of homes in the Phoenix area during the 1980s. Copies of the complete report, which includes a number of tables with textual interpretation, may be obtained by calling or writing the Center for Business Research, College of Business, Arizona State University, Tempe, AZ 85287; (602) 965-3961.

"Home Sales," from page 1

MEDIAN SALES PRICE

The median price of all homes sold during 1986 was $78,000, 5.4 percent higher than in 1985. This rate of inflation exceeded that of 1983 and 1985, but the rate during 1984 was slightly greater.

Resale single family home prices accelerated 6.1 percent during 1986, nearly double the 1985 rate and the fastest pace of the 1980s. After adjusting for the size of homes sold, however, the median price per square foot advanced just 3.5 percent, only slightly faster than in earlier years of the 1980s. This rate merely offset 1985's small 2.2 percent gain.

New single family home prices rose 7.4 percent, a slower rate than in 1984 and 1985. Still, the median price neared $90,000, well above the median of the other categories (see Figure I).

Resale townhouse and condominium prices rebounded in 1986, rising 3.1 percent after a 1.6 percent decline in 1985. The 1986 increase was in line with those during 1983 and 1984. New townhouse and condominium prices climbed 6.3 percent in 1986. Annual gains in this category have been erratic.

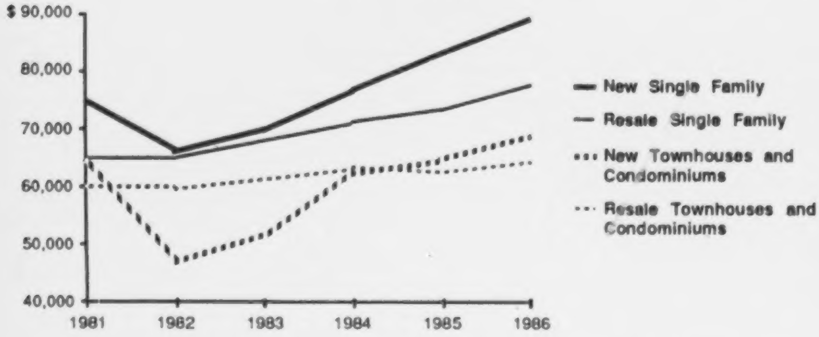
OUTLOOK

Housing price inflation has remained relatively stable and subdued throughout this economic cycle. For example, the rate for resale homes, after adjusting for size, has averaged approximately 3 percent. Because relative stability is likely during 1987 in the factors that affect home prices – supply of/demand for homes, underlying inflation rate, and affordability – a much different rate of increase in home prices is unlikely.

Except for the third quarter 1986 surge, the seasonally adjusted number of homes sold per quarter has barely increased since mid-1985. During 1987, sales probably will hold near this level, resulting in an annual sales level slightly below that of 1986.

– **Tom R. Rex**
Research Manager

FIGURE I
MEDIAN SALES PRICE



Source: Center for Business Research, College of Business, Arizona State University; from data supplied by Marketron Services, Inc., Phoenix

Reporting of Data

The data published in this article are derived from Maricopa County's legally recorded home sales. Since some sales are not recorded, the numbers slightly underestimate total sales.

Because the recording of a real estate transaction does not reveal whether the property is new, the Center uses a separate procedure to make this determination. However, the number of new homes sold is underestimated, and the number of existing homes sold is overestimated, both by the same undetermined amount.

TABLE 1
METROPOLITAN PHOENIX HOME SALES

	Single Family			Townhouse/Condominium			Grand
Fourth Quarter 1986	*Resale*	*New*	*Total*	*Resale*	*New*	*Total*	Total
Median sales price	$79,000	$91,900	$82,400	$63,475	$67,900	$65,000	$79,050
Percent change from:							
Third quarter 1986	-0.2	3.4	0.5	-2.3	-1.9	-2.6	-0.6
Fourth quarter 1985	5.8	5.8	5.8	1.6	1.3	0.9	4.7
Number of sales	10,513	2,507	13,020	1,999	697	2,696	15,716
Percent change from:							
Third quarter 1986	-18.8	-19.1	-18.9	-13.2	-29.0	-18.0	-18.7
Fourth quarter 1985	0.4	-7.5	-1.2	39.8	-6.7	23.8	2.3
Annual, 1986							
Median sales price	$78,000	89,375	80,500	64,400	69,125	65,900	78,000
Percent change from 1985	6.1	7.4	6.0	3.1	6.3	3.5	5.4
Number of sales	43,846	8,893	52,739	7,847	2,924	10,771	63,510
Percent change from 1985	13.6	-12.6	8.1	61.3	6.8	41.7	12.6

Source: Center for Business Research, College of Business, Arizona State University; from data supplied by Marketron Services, Inc., Phoenix.

Home Affordability Jumps During 1986

Affordability of Phoenix area homes continued to improve during fourth quarter 1986. The indexes climbed to the highest levels of the 1980s: 98 for new homes and 114 for resale homes (see Table 1 for definitions). A household earning the median income could afford an $89,800 home: more than the median-priced resale home, $79,000, but less than the median-priced new home, $91,900 (see Table 2).

During the fourth quarter, a sharp drop in the effective mortgage interest rate, to 10.1 percent, primarily accounted for the improved affordability. Resale home affordability surged more than new home affordability because the median resale home price declined slightly, while the median new home price rose. As a result of the changes in prices and mortgage rates, monthly housing payments went down more than 5 percent for resale homes and more than 2 percent for new homes. At the same time, household incomes increased.

Nationally, the fourth quarter situation was similar, with the affordability index rising to 94 for new homes and to 112 for resale homes. These values were slightly lower than the Phoenix area indexes. Incomes

TABLE 1
HOUSING AFFORDABILITY:
DEFINITION OF TERMS

Term	Definition
Affordability index	Defined in terms of the median-income household. An index of 100 indicates that a median-income household is able to qualify for a median-priced home under the assumptions provided in this table. An index of 90, for example, suggests that such a household earns only 90 percent of the needed income.
Income	Median gross household income is estimated from median effective buying income (similar to disposable income), published in *Sales and Marketing Management.*
Income qualification factor ...	Federal National Mortgage Association (FNMA) guidelines state that "monthly housing expenses should not represent more than 25 to 28 percent of gross monthly income." The upper limit is used.
Interest rate	The effective interest rate on 30-year, fixed-rate, conventional mortgage loans for single family homes includes the contract interest rate plus fees and charges, or "points," amortized over a 10-year period; computed by the Federal Home Loan Bank Board.
Loan amount	A downpayment of 15 percent is assumed.
Median sales price	Single family homes only. Metropolitan Phoenix data from real estate recordings in Maricopa County. National resale home data from National Association of Realtors; national new home data from U.S. Bureau of the Census.
Monthly housing payment....	As defined by FNMA, housing expenses comprise principal, interest, taxes and insurance. Data on taxes and insurance are not available; they are estimated at 15 percent of total housing expenses, using information supplied by the National Association of Home Builders.

Source: Center for Business Research, College of Business, Arizona State University

TABLE 2
HOUSING AFFORDABILITY INDEXES
Metropolitan Phoenix

			Resale Homes			New Homes		
Period	*Median Gross Monthly Income*	*Effective Interest Rate*	*Median Sales Price*	*Monthly Housing Payment*	*Affordability Index*	*Median Sales Price*	*Monthly Housing Payment*	*Affordability Index*
1981	$1,990	16.7%	$65,000	$910	61	$74,800	$1,050	53
1982	2,160	16.7	65,000	910	67	66,100	920	66
1983	2,270	13.7	68,000	790	80	70,050	820	78
1984	2,470	14.2	71,250	860	81	76,950	920	75
1985	2,640	12.9	73,500	810	92	83,200	910	81
1986	2,780	10.6	78,000	720	108	89,375	820	94
Quarter								
1st 1986	$2,730	11.0%	$75,000	$710	107	$88,200	$840	91
2nd 1986	2,760	10.7	77,150	720	108	87,950	820	95
3rd 1986	2,800	10.7	79,150	740	106	88,850	830	95
4th 1986	2,840	10.1	79,100	700	114	91,900	810	98

Source: Center for Business Research and Arizona Real Estate Center, College of Business, Arizona State University. Interest rates are from the Federal Home Loan Bank Board *News.*

were a bit higher nationally than locally, but home prices and interest rates were also greater. Throughout the 1980s, affordability usually has been slightly higher in the Phoenix area than nationally.

AFFORDABILITY DURING 1986

On average for the entire year, resale home affordability advanced 17 percent to an index value of 108. New home affordability increased almost as much, 6 percent, to an index of 94.

Incomes rose nearly as quickly as home prices during 1986, allowing the sharp drop in mortgage interest rates to be carried through to the monthly housing payment, which declined 9 percent for new homes and 11 percent for resale homes.

Between 1981 and 1986, the monthly payment fell approximately 22 percent for both new and resale homes. These declines are more impressive in comparison to 20 percent inflation in consumer prices in the Phoenix area and a nearly 40 percent increase in household incomes. As a consequence, affordability of both new and resale homes shot up 77 percent.

AFFORDABILITY UNDER DIFFERENT ASSUMPTIONS

Changing the assumptions used to calculate the affordability indexes can substantially affect their levels. For example, changing the income qualification factor from 28 percent, the upper end of the range set by FNMA, to 25 percent, the lower end of the range, would reduce the 1986 affordability indexes approximately 10 percentage points. Under this assumption, the median-income household could not afford the median-priced resale home.

Similarly, reducing the amount of the downpayment from 15 percent to 10 percent of the purchase price would lower the affordability indexes approximately five percentage points. However, paying 20 percent of the purchase price as a downpayment would raise the 1986 affordability indexes approximately six percentage points. Under this condition, the median-income household could afford the median-priced new home.

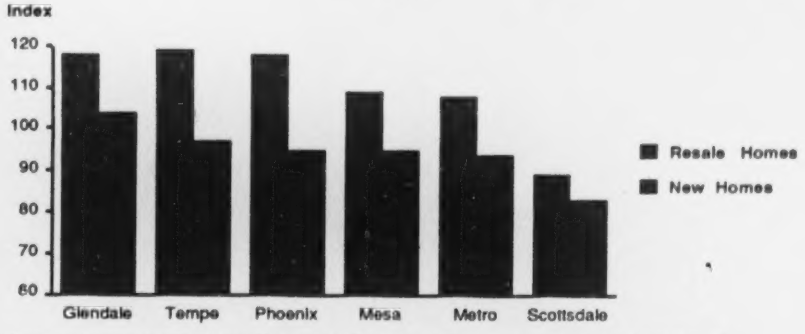
Shortening the term of the loan would reduce affordability, but not by an appreciable amount until the length drops to approximately 20 years. In contrast, lengthening the term past 30 years would have almost no impact on affordability.

Besides variations in financing conditions, affordability is highly sensitive to changes in market conditions. Had interest rates remained constant at the 1985 level during 1986, the affordability indexes would have slipped minimally from their 1985 values instead of climbing substantially. In contrast, had effective interest rates fallen further, to slightly less than 10 percent, the median-priced new home could have been purchased by the median-income household. Similarly, if home prices had not changed from their 1985 levels, 1986 affordability indexes would have been roughly eight percentage points higher.

AFFORDABILITY BY CITY

Housing affordability varies across the Valley. While mortgage interest rates are standard for the entire area, housing prices deviate widely. Even after adjusting for differing income levels, affordability is not constant among the largest cities.

FIGURE I
HOUSING AFFORDABILITY INDEX
By City, 1986



Source: Center for Business Research, College of Business, Arizona State University

For resale homes, affordability during 1986 was greatest in Glendale, Phoenix and Tempe, approximately 10 percent higher than the average for the metropolitan area (see Figure I). In Mesa, resale home affordability approximated the metro median, but Scottsdale's index was 18 percent less than the Valley's. The median sales price in Scottsdale, $118,000, was 51 percent higher than that for the Phoenix area, while the Scottsdale median income surpassed the Valley's by only 25 percent.

The variation in affordability is not as great for new homes. Glendale's new homes were the most affordable of the larger cities, with an index exceeding the metro median by 11 percent. The median-income household can afford the median-priced new home in Glendale. New home affordability is near the metro median in Mesa, Phoenix and Tempe but 12 percent less in Scottsdale.

OUTLOOK

Affordability has improved substantially since 1984 mainly because of a sharp decline in mortgage interest rates. With prevailing contract rates near 9 percent and an expected inflation rate during 1987 of less than 4 percent, the spread between these measures remains historically wide. However, due to market expectations of a higher long-term inflation rate as well as other complications, such as the budget deficit, the historical 3 to 4 percentage-point spread is unlikely to return during 1987. Thus, mortgage rates may fall a little further, but their contribution to improved housing affordability will diminish this year.

The median household income probably will continue to rise at a pace slightly exceeding the inflation rate. Median home prices are likely to advance at near the current pace: resale home prices minimally less than incomes and new home prices marginally more. The result should be modest improvement in resale home affordability during 1987, with lesser gains in new home affordability.

– Tom R. Rex
Research Manager

GSP Records Healthy Third Quarter Gain

The Arizona Gross State Product expanded a strong 8.2 percent (inflation-adjusted and annualized) during third quarter 1986. Adjusted GSP, which excludes the volatile agriculture and mining industries, rose at a comparable pace of 7.9 percent (see Table 1).

Growth during the third quarter, more vigorous than during most of the prior two years, represented a rebound from the second quarter's subpar rate. The coincident index measured similar economic improvement (see page 11).

All sectors contributed to the third quarter gain, though the increases both in agriculture and in finance, insurance and real estate were minimal. The latter sector, as well as construction and trade, has experienced a marked slowing from the double-digit rates of 1985. As seen in Figure I, however, only trade's gross product rose less than 6 percent between third quarter 1985 and third quarter 1986. The gross product of most industries grew between 7 and 9 percent. Despite the large gain recorded by the mining industry, its gross product remained below the 1980-82 level.

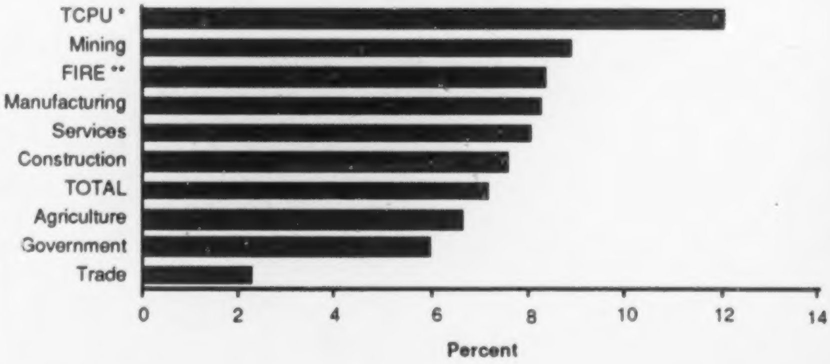
REVISIONS

In addition to routine data updating, an improvement was included in the latest GSP calculations. The updates – primarily revisions to annual GNP data, by sector – affected current and real dollar estimates for 1983 through 1986. The improvement – changing certain deflators used in calculating the GSP – affected only real GSP, which was revised back to 1970.

Through 1980, changes in the overall GSP deflator, on average, had been comparable to those in the GNP deflator. Between 1981 and 1985, however, the originally reported GSP deflator measured less inflation than the GNP deflator in each year (see Table 2). After the revision, the deflators again advanced similarly, except in 1981 and 1982. The variance in those years resulted primarily from the differing composition of the mining industry. In Arizona, mining is dominated by copper, the price of which fell sharply during 1981 and 1982. Nationally, oil and gas make up much of mining's gross product.

The results of these updates and improvements to GSP are illustrated

FIGURE I
ARIZONA GROSS STATE PRODUCT
Real Industrial Growth, Year Ending Third Quarter 1986



*Transportation, Communications and Public Utilities
**Finance, Insurance and Real Estate

Source: Center for Business Research, College of Business, Arizona State University; in cosponsorship with the ASU College of Business Dean's Council of 100.

TABLE 1
ECONOMIC GROWTH

	Arizona Gross State Product[r]				Gross National Product
Quarter	*Billions of Current Dollars, Annualized*	*Billions of 1982 Dollars, Annualized*	*Annualized Percent Change (1982 Dollars)*	*Annualized Percent Change (Adjusted GSP)**	*Annualized Percent Change (1982 Dollars)*
First 1985	46.821	42.516	17.5	15.8	3.0
Second 1985	47.218	42.450	-0.6	3.2	2.3
Third 1985	48.319	43.089	6.0	7.5	4.1
Fourth 1985	49.134	43.548	4.3	5.0	2.1
First 1986	51.022	45.099	14.2	10.4	3.7
Second 1986	51.372	45.250	1.3	4.4	0.6
Third 1986	52.716	46.176	8.2	7.9	2.8

*The adjusted GSP is the annualized GSP in billions of 1982 dollars, minus the contributions of the agriculture and mining industries.

[r] Revised

Source: Center for Business Research, College of Business, Arizona State University; in cosponsorship with the ASU College of Business Dean's Council of 100.

in Table 3. Revised real GSP growth is lower in each year of the 1980s. However, the quarterly pattern of growth, best seen in adjusted GSP, did not substantially change. After slowing during fourth quarter 1984, the Arizona economy has grown erratically.

OUTLOOK

Growth of the gross product during the fourth quarter probably was much slower than during the third quarter. Employment gains slowed, contributing to declines in the coincident index during October and November. This slowdown probably was temporary, however – a continuation of the erratic economic growth measured since late 1984. The Arizona leading index increased sharply during spring and summer 1986, suggesting faster economic expansion during first quarter 1987.

Adjusted GSP growth during 1986 probably averaged near 7 percent, down modestly from the 1985 rate of 8.3 percent. Further moderation is likely during 1987, but growth should at least match the 5.5 percent long-term average for the fifth consecutive year.

– **Tom R. Rex**
Research Manager

TABLE 2
EFFECT OF REVISION TO ARIZONA GSP DEFLATOR

	GSP Deflator		GNP
	Original[1]	*Revised*	Deflator
1980	9.3	9.7	9.1
1981	6.9	7.5	9.6
1982	3.2	4.7	6.4
1983	3.6	4.3	3.9
1984	2.4	3.5	3.8
1985	1.6	3.3	3.3

TABLE 3
EFFECT OF REVISION TO ARIZONA GROSS STATE PRODUCT
Annualized Percent Change in Real GSP

	GSP		Adjusted GSP[2]	
Annual	*Original*[1]	*Revised*	*Original*[1]	*Revised*
1980	3.1	2.7	1.3	0.8
1981	6.0	5.4	3.3	3.0
1982	-1.7	-3.2	-0.5	-2.0
1983	6.4	5.7	8.8	7.9
1984	11.6	10.2	11.7	10.3
1985	8.5	7.3	9.7	8.3
Quarterly				
First 1984	13.3	12.6	10.5	9.5
Second 1984	5.0	3.7	10.5	9.1
Third 1984	13.7	11.7	12.4	10.7
Fourth 1984	3.0	1.4	3.6	1.9
First 1985	15.3	17.5	14.6	15.8
Second 1985	1.7	-0.6	5.7	3.2
Third 1985	7.4	6.0	8.7	7.5
Fourth 1985	9.6	4.3	10.7	5.0
First 1986	13.3	14.2	12.4	10.4
Second 1986	7.0	1.3	11.4	4.4

[1] As of November 1986

[2] Adjusted GSP excludes the contributions of the agriculture and mining industries.

Source (Tables 2 and 3): Center for Business Research, College of Business, Arizona State University; in cosponsorship with the ASU College of Business Dean's Council of 100.

'86 Inflation Sets Record Low at 1.3 Percent

The annual average increase during 1986 in the Metropolitan Phoenix Consumer Price Index moderated to just 1.3 percent, the lowest rate since the index began in 1975. The deceleration was sharper in the Phoenix area than nationally. Metropolitan Phoenix inflation dropped from a pace faster than the national average in 1984 and 1985 to a lower rate in 1986 (see Figure I).

Several methods may be used to calculate the inflation rate from the CPI. In this article, the annual average percent change is used: the average of the four quarterly index values for a year, compared to the average of the previous year. The other widely used method is employed in the quarterly CPI reports (see the February *Arizona Business*). It compares the index value at the end of the year to the value at the end of the previous year. Because the inflation rate was almost stable during 1986, the annual average increase nearly equaled the year-end inflation rate (1.1 percent).

CONSUMER PRICES IN 1986

The single greatest cause of lower inflation in 1986 was plunging gasoline prices. After a 3 percent increase during 1985, gas prices dropped 25 percent during 1986, reducing the CPI all-items rate by 1.5 percentage points. However, each major category registered lower inflation for 1986. Just as large gains in several subcategories pushed inflation to unexpected levels during 1984 and 1985, the complete absence of price shocks allowed inflation to slide to an unusually low plateau in 1986.

Food and Beverages

At 4.2 percent, this major category's inflation rate during 1986 was only minimally less than in 1985 (see Table 1). In most of its components, the 1986 inflation rate was comparable to that measured in 1984 and 1985.

Housing

The significance of this category in calculating the all-items index is occurred in the transportation category, inflation in all major categories was less than expected. Most economic processes benefited from lower energy costs, with the savings passed along to consumers in smaller price increases.

Since the end of the 1981-82 recession, the temporal pattern of inflation (see Figure II) resembles that of a typical economic cycle. Yet no recession occurred during 1986 as suggested by the slowing inflation rate.

OUTLOOK

Inflation nationally is likely to accelerate moderately during 1987, into the 3-to-4 percent range experienced between 1983 and 1985. The consensus forecast of *Blue Chip Economic Indicators* calls for a 3.2 percent increase, with most panelists predicting a rate between 2.5 and 4 percent. No panelist foresees either deflation or much higher inflation. A similar acceleration is likely in the Phoenix area, to approximately 3.5 percent.

With 1986 year-end inflation rates near 1 percent, a 1987 annual average increase near 3.5 percent implies a 1987 year-end inflation rate exceeding 4 percent. Of the greater than three-percentage-point acceleration in the inflation rate expected between year-end 1986 and year-end 1987, more than one-half probably will be a direct result of the swing from falling to rising gasoline prices. In the Phoenix area, gasoline prices began to increase substantially in January.

– **Tom R. Rex**
Research Manager

CPI Description Available

A description of the Consumer Price Index is available on request from the Center for Business Research [call (602) 965-3961]. It answers common questions concerning the CPI; for example:

- What is the difference between the CPI for urban consumers (CPI-U) and the CPI for urban wage earners and clerical workers (CPI-W)?
- What is the relationship between the CPI and the inflation rate, and how is this rate calculated?
- Is the CPI a cost-of-living index?
- How is the CPI applied in contractual agreements?

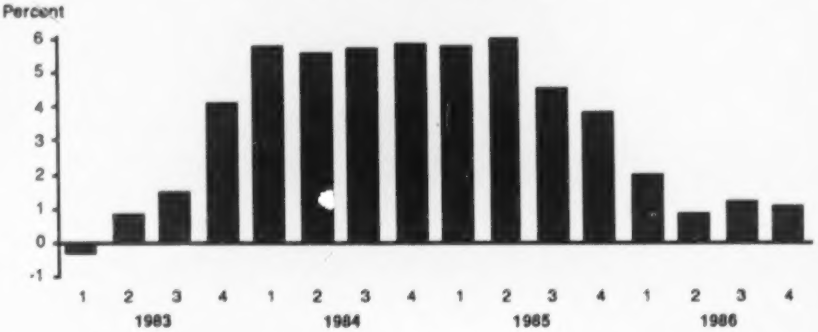
TABLE 2
METROPOLITAN PHOENIX CONSUMER PRICE INDEX
UNITED STATES AND COMPARATIVE METROPOLITAN AREAS
1986 Annual Average Percent Change

Expenditure Category	*Phoenix*	*United States*	*Denver**	*San Diego**
ALL ITEMS	1.3%	1.9%	1.0%	3.2%
Food and Beverages	4.2	3.2	1.0	4.2
Housing	2.2	2.9	1.6	5.5
Apparel and Upkeep	1.5	0.9	-0.2	0.4
Transportation	-5.6	-3.9	-3.9	-3.0
Medical Care	5.7	7.5	7.9	7.0
Entertainment	6.8	3.4	2.1	4.0
Other Goods and Services	4.6	6.1	7.0	3.8

*Estimated

Source: Metropolitan Phoenix data compiled by the Center for Business Research, College of Business, Arizona State University, in cosponsorship with Valley National Bank; other data are from the U.S. Department of Labor, Bureau of Labor Statistics.

FIGURE II
METROPOLITAN PHOENIX CONSUMER PRICE INDEX
YEAR-OVER-YEAR INFLATION RATE



Source: Center for Business Research, College of Business, Arizona State University, in cosponsorship with Valley National Bank.

CPI Revision Upcoming

Approximately once every decade, the U.S. Department of Labor issues a comprehensive revision to the methodology used to compute the Consumer Price Index. These updates and improvements do not affect any of the previously published index values. Further, the indexes generated with the new methodology are linked directly to the historical series so that no discontinuities exist.

Though improvements were incorporated into shelter category computations in 1983, the last major revision to the CPI occurred in 1978. Changes to be implemented in the January 1987 national CPI are not as substantial as those of nine years ago.

Since the Center for Business Research calculates the Metropolitan Phoenix Consumer Price Index using a methodology as similar as possible to that employed by the federal government, the 1987 revisions will be incorporated. The timing of this update to the Phoenix index cannot be predicted because it is necessary to wait for the U.S. Department of Labor to make available detailed information.

More information concerning the nature of the changes will be published when the new methodology is implemented.

Coincident Index Closely Follows Leading Index

Growth of the Arizona coincident index (introduced in the September/October 1986 *Arizona Business*, page 13) probably accelerated slightly during the winter from the fall's inconsistent, mediocre rate. The growth rate should quickly stabilize at this slightly faster pace.

These predictions are based on the performance of the Arizona Index of Leading Economic Indicators. Its changes normally lead those of the coincident index by approximately seven months, a relationship clearly illustrated in the accompanying figures.

Figures I and II track the entire history of the two indexes. Each was converted to a growth rate, eliminating the trend, and smoothed by dividing each 12-month moving average by the 12-month moving average of the period ending one year earlier. Except during the late 1970s, when the growth rate of the leading index gradually slowed while that of the coincident index flattened and then rose, the correspondence between the two measures has been close.

A variation of Figure II is presented in Figure III, in which each 12-month moving average is divided by the 12-month moving average ending just one month earlier. While the lines are more jagged, the same strong leading relationship is obvious. Figure III allows one to see shorter fluctuations in the indexes. For example, the latest acceleration, then stabilization, of the leading index's growth rate had not been matched by the coincident index through late 1986.

– Tom R. Rex
Research Manager

David L. Mix, a doctoral student in the College of Business, suggested use of the 12-month-moving-average rate of change to display the relationship between the leading and coincident indexes.

FIGURE I
GROWTH RATES OF ARIZONA COINCIDENT AND LEADING INDEXES, 1972-78
12-Month Moving Average Divided by 12-Month Moving Average of Period Ending 12 Months Earlier

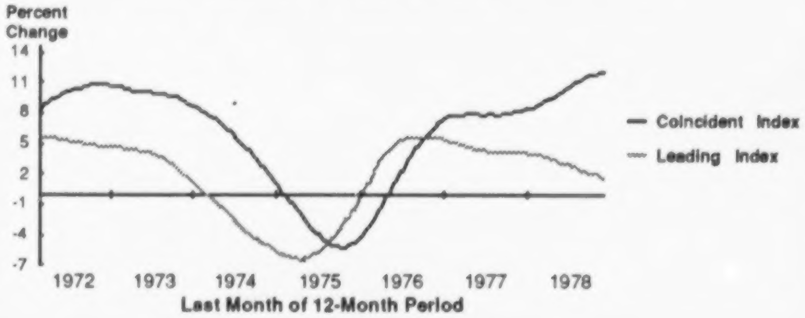


FIGURE II
GROWTH RATES OF ARIZONA COINCIDENT AND LEADING INDEXES, 1979-86
12-Month Moving Average Divided by 12-Month Moving Average of Period Ending 12 Months Earlier

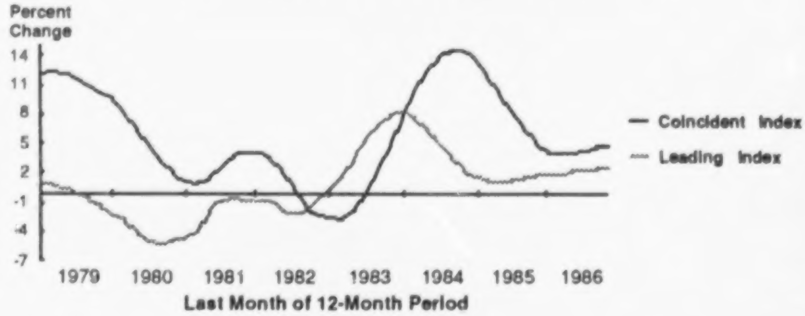
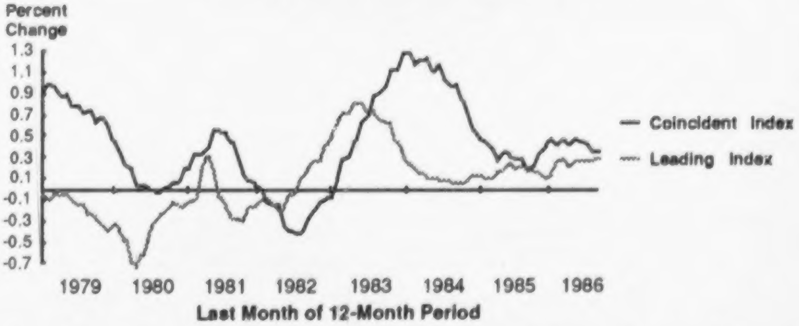


FIGURE III
GROWTH RATES OF ARIZONA COINCIDENT AND LEADING INDEXES, 1979-86
12-Month Moving Average Divided by 12-Month Moving Average of Period Ending One Month Earlier



Source (Figures I, II and III): Center for Business Research, College of Business, Arizona State University

Standard of Living Below Average Throughout Arizona

Arizona's standard of living – a comparison of the cost of living relative to wage/income levels – remains below the national average and other comparative norms. In the metropolitan areas, the cost of living is near expected levels, but incomes lag. In the non-metropolitan areas, living costs are higher, and incomes are lower, than in comparable areas nationwide.

This article updates information presented in the November 1985 *Arizona Business* and provides more detail on Arizona communities. First, a summary of national patterns in cost of living, income and standard of living is presented; conclusions are based on 1985 data and are similar to those previously reported.

TABLE 1
MEDIAN LIVING COST INDEXES
By Geographic Area, Population of Urbanized Area, and Income
(National Median = 100)

Area	**Index**
New England	105*
Middle Atlantic	101
South Atlantic	98
East South-Central	95*
West South-Central	100
East North-Central	98
West North-Central	95*
Mountain	100
Pacific	106*
Population	
Less than 25,000	97*
25,000-74,999	97*
75,000-124,999	98
125,000-199,999	98
200,000-399,999	98
400,000-999,999	101*
1 million or more	109*
Income	
Less than $20,500	96*
$20,500-$22,999	99
$23,000-$25,499	99
$25,500 or more	104*

*Statistically significant difference from the national average.

Source: Center for Business Research, College of Business, Arizona State University, based on 1980 Census population figures, 1985 *Sales and Marketing Management* household disposable income figures, and 1985 data of the American Chamber of Commerce Researchers Association (ACCRA).

COST OF LIVING

Living costs vary widely across the nation. The cost of living is highest along the East and West coasts and lowest in the Southeast and Northern Plains. In the Mountain region, which includes Arizona, the median cost of living matches the national median (see Table 1). These conclusions are based on information from a quarterly study conducted by the American Chamber of Commerce Researchers Association (ACCRA). Approximately 240 towns and cities nationwide participate in this study.

Cost of living correlates closely to the population of an area, with towns of less than 75,000 people enjoying significantly lower living costs and urban areas with more than 400,000 residents experiencing significantly higher costs than the national average. Living costs also correlate with area income levels.

INCOME LEVELS

Income levels vary geographically, but the pattern does not exactly match that of the cost of living. Significantly lower incomes are found in the Southeast, while the Great Lakes region enjoys significantly higher incomes (see Table 2). The median income in the Mountain region approximates the national average. These findings are based on the "effective buying income" – similar to household disposable income – reported in *Sales and Marketing Management* (1985 income figures are less than those previously reported for 1984 because of revisions in the calculations of these estimates).

Incomes correlate to population in nearly a straight-line relationship, with the lowest incomes in towns of fewer than 25,000 residents and the highest incomes in urban areas of more than one million people. Only the income of the largest population class is significantly different from the national average.

STANDARD OF LIVING

A measure of the standard of living can be derived by adjusting income levels for the cost of living: the simple division of an area's income by its cost of living index. The adjusted income figures should vary little by city size or by region if income

TABLE 2
MEDIAN HOUSEHOLD INCOME WITH AND WITHOUT COST-OF-LIVING ADJUSTMENT

Geographic Area	**Income**	**Adjusted Income**
New England	$26,700	$25,550
Middle Atlantic	23,800	23,400
South Atlantic	22,525	22,750
East South-Central	19,600*	20,300
West South-Central	21,650	21,750
East North-Central	24,300*	25,050*
West North-Central	22,275	23,625
Mountain	23,250	23,025
Pacific	24,150	21,475
Population of Urbanized Area		
Less than 25,000	$21,100	$22,075
25,000-74,999	21,150	21,850
75,000-124,999	22,050	22,600
125,000-199,999	23,750	23,750
200,000-399,999	24,175	24,100
400,000-999,999	24,075	23,375
1 million or more	26,150*	24,700
NATIONAL AVERAGE	$22,925	$22,975

*Statistically significant difference from the national average.

Source: Center for Business Research, College of Business, Arizona State University, based on 1985 *Sales and Marketing Management* household disposable income figures and 1985 ACCRA cost-of-living figures.

levels adequately compensate for differences in cost of living.

The adjustment does reduce the variation in income by city size. The median adjusted income is not significantly different from the national average in any city-size class, though the figures are lower in areas with a small population.

Significant regional differences, however, still remain in the adjusted income figures. The Southeast's adjusted income, while higher than the income figure, is significantly less than the national average. After adjustment, the Great Lakes region's income is even higher. Because of heavy out-migration of people from this region, a high standard of living may be a necessary labor market adjustment to retain and attract people.

ARIZONA

Compared to national averages, both the cost of living and median income in the Phoenix area are relatively high, resulting in a standard of living near average (see Table 3). Throughout the rest of Arizona, income levels are well below the norm and living costs are higher than average, resulting in adjusted incomes far below the national average. However, because of the strong correlation of each measure with geography and population size, comparisons to the national average can be misleading.

For example, when population size is taken into consideration, living costs in Arizona's metropolitan areas are slightly less than average, but incomes, even in the Phoenix area, are considerably less than average; hence, standards of living are subpar. Since the Mountain region is near the national average in prevailing income and cost-of-living levels, comparisons of Arizona cities to the Mountain region are not much different than those to the national average.

Compared to 13 ACCRA study participants classified as western metropolitan areas with populations between 400,000 and two million, Tucson's adjusted income, $19,795, ranks last. Phoenix's adjusted income, $22,525, ranked ninth; while below the average of this group of urban areas, it is comparable to the adjusted income of several areas, including San Diego. San Jose and Denver have the highest standards of living; other than Tucson, the lowest living standards are measured in Austin and Albuquerque.

In Arizona's non-metropolitan areas, income levels fall short of the national average for small towns. Yet the cost of living, especially in Page and Show Low, is higher than in small towns nationwide, probably because the long distances between small towns in Arizona raises the costs of transported goods. As a result, the standard of living in rural Arizona is approximately 20 percent lower than in the typical small American town. Compared to other small towns in the West, Arizona's rural areas have adjusted income levels less than most, though a few, such as Chico, California, have an equally low standard of living.

TABLE 3
COST OF LIVING, INCOME AND STANDARD OF LIVING IN ARIZONA

	Cost of Living	Income	Standard of Living
	Compared to National Average		
Phoenix	+7%	+6%	-2%
Tucson	0	-13	-14
Yuma	+2	-22	-23
Casa Grande	+3	-21	-23
Page	+12	-12	-21
Show Low	+13	-16	-26
	Compared to Population-Size Class		
Phoenix	-2%	-9%	-7%
Tucson	-2	-17	-15
Yuma	+5	-18	-22
Casa Grande	+6	-14	-19
Page	+15	-4	-17
Show Low	+16	-9	-22
	Compared to Mountain Region		
Phoenix	+6%	+1%	-5%
Tucson	-1	-17	-17
Yuma	+1	-25	-26
Casa Grande	+2	-25	-26
Page	+11	-16	-24
Show Low	+12	-20	-29

Source: Center for Business Research, College of Business, Arizona State University, based on 1985 *Sales and Marketing Management* household income figures for counties and 1985 ACCRA cost-of-living figures for Phoenix, Tucson and Yuma. Cost of living data for Casa Grande, Page and Show Low were reported in November 1986 *Arizona Business*.

CONCLUSIONS

The cost of living is highest in New England and along the West Coast; it is lowest in the Southeast and the Northern Plains. In the Mountain region, it is near the national average. In addition to this geographic variation, living costs increase with population. In Arizona's metropolitan areas, living costs are near the level expected for their size and location in the Mountain region. In Arizona's small towns, living costs are roughly 5 to 15 percent higher than expected.

Incomes also increase with population. They are highest in the Great Lakes region and lowest in the Southeast. The Mountain region's median income is near the national norm. Throughout Arizona, however, income levels are approximately 5 to 15 percent less than in comparative areas.

While lowest in small towns, the standard of living does not vary significantly by population. It is highest in the Great Lakes region and lowest in the Southeast; the Mountain region's median living standard is close to the national standard. In Arizona, however, the standard of living is lower – approximately 7 percent lower for metropolitan Phoenix than the median for large urban areas. Throughout the rest of the state, living standards fall 15 to 25 percent short of those in comparable areas.

– Timothy D. Hogan
– Tom R. Rex
Research Manager

Dr. Hogan is Professor of Economics and Acting Director of the Center for Business Research at ASU.

January Purchasing Indicators Signal Upward Economic Growth

The beginnings of an upward tilt in the economic growth trend became evident in January, as both new orders received and production recorded good growth. Employment went up, reversing December's slight decline. Additions to inventory were made, while prices continued to increase only moderately. Thus, after losing a good bit of pep during the last half of 1986, the Arizona economy began its fifth year of expansion on a healthier note.

While price increases likely will step up during the first half of 1987, manufacturing is signaling that further rises will be needed to meet higher new order bookings and to bolster inventory levels that have not kept pace with economic growth. If the trade deficit continues to decline, aided by the falling dollar, and if consumer spending holds firm or increases, the next several months likely will bring additional upward movement in the economic growth curve.

Table 1 presents the results of the January survey of Arizona purchasing managers. Analysis of these results follows.

PRICES

Prices paid for purchased items increased in January at a rate consistent with the last six months of 1986. There is no sign that the relatively moderate inflation rate is beginning to heat up, which should facilitate a continuation of the economic expansion.

DELIVERY TIME

Delivery time on shipments from vendors recorded its smallest monthly gain since September 1985. Evidently, vendors are not experiencing bottlenecks in filling the orders they receive.

INVENTORY LEVELS

Inventory levels of purchased materials rose slightly, following December's level performance. After holding almost steady during all of 1986, inventories probably are barely adequate to support the current level of production. Any step-up in economic activity will trigger inventory building, which could add a multiplier to the expansion.

NEW ORDERS

New orders received by Arizona firms advanced at a strong pace in January, registering the greatest monthly jump since last April. This increase was more than twice as great as in the previous month and indicates the economy is growing at a faster rate as the new year begins.

PRODUCTION

Production grew in January, triggered by the new order surge, at a monthly increase rate more than twice that of December. This monthly gain was the largest since September.

EMPLOYMENT

Employment went up slightly in January, following two months of minor declines. Employment was spotty during the last half of 1986, but the January performance seems to indicate that it will pick up as needed to meet higher production rates.

PURCHASES

Purchases of materials and supplies also increased in January, at a faster rate than in December. This is a good sign of an expanding economy.

– Harold Fearon

Dr. Fearon is the National Association of Purchasing Management Professor in the ASU College of Business.

Arizona Purchasing Survey

Now in its 24th year of monthly reporting, Dr. Harold Fearon's survey of Arizona business conditions utilizes data from a questionnaire sent to members of the purchasing management associations of Arizona and southern Arizona. It asks them to indicate the direction of activity - higher, unchanged, or lower - of seven key measures of economic activity in the month just ended. These purchasing managers deal daily with supply, demand, and price factors in the marketplace; their aggregate readings have accurately charted the state's economic course for two decades, providing timely data on turning points.

TABLE 1
JANUARY PURCHASING SURVEY

	Percent of Purchasing Managers Indicating Each Response (January compared to December)		
Key Indicators	*Higher*	*Same*	*Lower*
Prices paid for major commodities	26	68	6
Delivery time from vendors	19	65	16
Purchased materials inventory level	31	43	26
New orders received	41	39	20
Production	33	50	17
Employment	19	66	15
Purchases	46	32	22

Source: Purchasing Management Association of Arizona and the Purchasing Management Association of Southern Arizona.

Arizona Leading Index Rises Modestly in December

A 0.2 percent gain was measured during December in the Arizona Index of Leading Economic Indicators, the fifth consecutive increase between 0 and 0.3 percent (see Figure I). The index climbed to 110.3 from a revised 110.1 in November (1977 = 100).

For the second straight month, one-half of the index components went up (see Table 1). The national money supply (M2) led the advance for the ninth time during 1986. After inflation adjustment, M2 rose nearly 17 percent in 1986, more than in any year since 1972.

The change in sensitive materials prices contributed strongly to the index's growth for the third consecutive month. Residential building permits also rose, neutralizing the November decline.

While the inventory levels and new orders components increased in December, the other indicators derived from a survey of purchasing managers fell, nearly offsetting the gains. In addition, hours worked in the manufacturing industry decreased, and the number of first-time unemployment insurance claims jumped (a negative indicator).

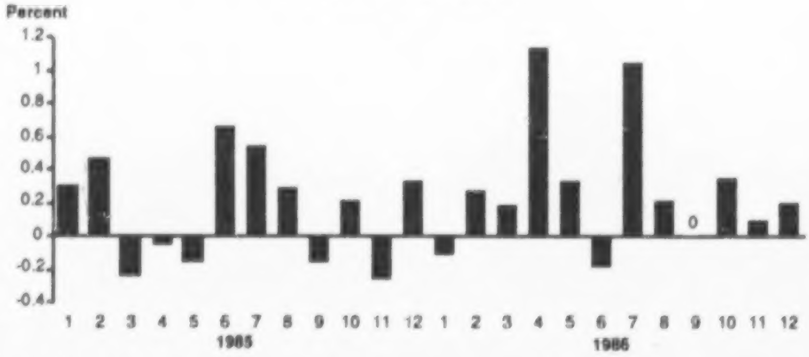
1986 PERFORMANCE

Compared to the highly erratic behavior of 1984 and 1985, the index was relatively stable during 1986, with small gains recorded in eight months. The index climbed more during 1986 than during 1984 or 1985.

The improved performance resulted mostly from the extraordinary rise in money supply. Gains in sensitive materials prices and residential building permits added strength to the index, but the components derived from a survey of Arizona purchasing managers declined nearly as much as in 1984.

During the past three years, the money supply component alone pushed the index up. After falling in 1984, the net change in the other nine components was nil during 1985 and 1986. In contrast, growth was much better balanced during the long expansion of the late 1970s.

FIGURE I
ARIZONA INDEX OF LEADING ECONOMIC INDICATORS
MONTHLY CHANGE



Source: Center for Business Research, College of Business, Arizona State University

TABLE 1
NET CONTRIBUTION OF INDIVIDUAL COMPONENTS TO THE ARIZONA INDEX OF LEADING ECONOMIC INDICATORS

	Net Contribution[+]			
	Sept.	*Oct.*	*Nov.*	*Dec.*
Delivery Time*	-.02	.07	.03	-.05
Inventory Levels*	-.04	.06	-.14	.08
New Orders*	.09	-.05	-.17	.11
Production*	.00	.01	.03	-.04
Employment*	-.11	.07	-.01	-.08
Residential Building Permits	.16	-.32[r]	-.17[r]	.16
Unemployment Insurance Claims	-.12	-.05	.13	-.27
Average Workweek, Manufacturing	.00	.07	-.05[r]	-.11
Money Supply	.12	.34	.14[r]	.27
Change in Sensitive Materials Prices	-.09	.16	.29[r]	.14
OVERALL INDEX	.00	.35[r]	.10[r]	.20

[r] Revised

[+] The net contribution of each component is calculated by multiplying the monthly percent change in its index by its relative importance.

***Based on indicators from the purchasing management associations of Arizona and southern Arizona.**

***Source:* Center for Business Research, College of Business, Arizona State University.**

OUTLOOK

Since last summer, the leading index has indicated that the Arizona economy will grow at a stable pace during 1987. The chance of a recession beginning during the next several months is less than 3 percent.

In late 1986, the Arizona economy was weaker than at any time since the end of the 1982 recession, with employment declining between September and December. Three decreases in the leading index between September 1985 and January 1986 had indicated that strong economic growth was not likely during late 1986. Health should return to the Arizona economy by early 1987, based on strong gains in the leading index during spring and early summer 1986.

– Tom R. Rex
Research Manager

ARIZONA ECONOMIC INDICATORS

	Month or Quarter	Value	Percent Change from Previous Period	Percent Change from Year Ago	Year-to-Date	
					Value	Percent Change from Year Ago
GROSS STATE PRODUCT (In Billions of Dollars, at Annual Rate)						
Arizona - Current Dollars	3rd Qtr.	52.716	2.6	9.1	NA	NA
Arizona - 1982 Dollars	3rd Qtr.	46.176	2.0	7.2	NA	NA
CONSUMER PRICE INDEX (1977 = 100)						
Metropolitan Phoenix	4th Qtr.	193.6	-0.1	1.1	NA	NA
INDEX OF LEADING ECONOMIC INDICATORS (1977 = 100)						
Arizona	Dec.	110.3	0.2	3.6	NA	NA
BUILDING PERMITS (Total Dollar Value in Thousands)						
Maricopa County	Nov.	238,096	-27	12	3,698,096	-1
Pima County	Nov.	49,991	-2	13	741,248	3
Balance of State	Nov.	48,586	-52	17	637,946	0
Arizona	Nov.	336,673	-30	13	5,077,290	0
TOTAL HOUSING UNITS AUTHORIZED						
Maricopa County	Nov.	1,873	-34	-35	42,260	-16
Pima County	Nov.	684	-52	56	11,285	-2
Balance of State	Nov.	905	-7	-21	11,216	-28
Arizona	Nov.	3,462	-34	-22	64,761	-16
HOME SALES						
Maricopa County - Number	Dec.	6,569	43	20	63,510	12
Maricopa County - Median Price	Dec.	79,800	1.0	3.8	78,000	5.4
HOUSING AFFORDABILITY INDEXES						
Metropolitan Phoenix - New Homes	4th Qtr.	98	3.2	21.0	NA	NA
Metropolitan Phoenix - Resale Homes	4th Qtr.	114	7.5	23.9	NA	NA
MORTGAGE INTEREST RATES (Conventional, 30-year, Fixed-rate)						
Maricopa County	Jan.	9.1	-1.1	-15.7	NA	NA
POPULATION ESTIMATES (In Thousands)						
Maricopa County	4th Qtr.	1,942	1.0	4.5	NA	NA
Arizona	4th Qtr.	3,392	0.9	3.8	NA	NA
ELECTRICAL POWER SALES (In Millions of Kilowatt Hours)						
Arizona	Dec.	2,847	17.3	1.9	35,887	0.9

NA = Not Applicable

Source: Center for Business Research, College of Business, Arizona State University

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ARIZONA STATE UNIVERSITY ■ COLLEGE OF BUSINESS
CENTER FOR BUSINESS RESEARCH

Quarterly Economic Forecast Update

Arizona Economic Growth To Remain Modest in '87

The bewildering array of economic statistics and data revisions issued at the start of each year seems especially maze-like in 1987. Combined with tax reform and the maturity of the current expansion, they have induced a high level of uncertainty regarding the economic outlook for the nation and for Arizona. Nevertheless, the Economic Outlook Center in the ASU College of Business anticipates a continuation of Arizona's recent pattern of modest growth this year and expects further improvement in 1988.

The forecasts for Arizona and the Phoenix metropolitan area (see Tables 1 and 2) are based on a scenario for the national economy described in the forecast article below. Nationally, the Center envisions a period of slow growth for the months ahead. As the year progresses, U.S. industrial production is expected to surge in response to the dollar's declining exchange value. A cheaper dollar should allow American manufacturers to compete more effectively in world markets dominated by foreign competitors in recent years.

EMPLOYMENT

The outlook for Arizona also depends on a recovery by the manu-

See "AZ Forecast," page 2

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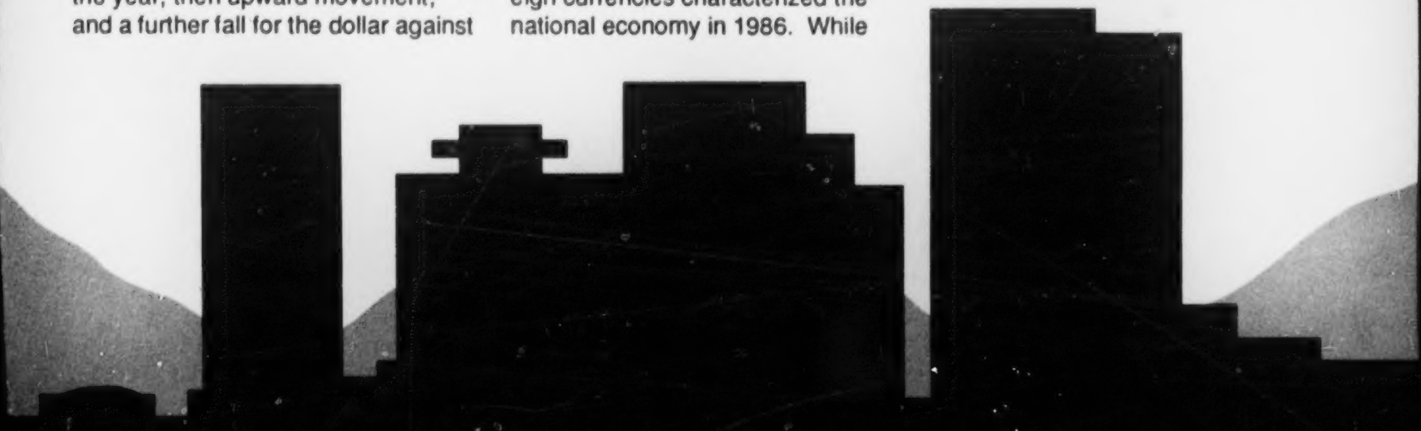
National Economic Forecast

Pattern of Moderate Growth To Repeat in '87

U.S. economic performance in 1987 should just match last year's growth rate of 2.5 percent, according to projections of the Economic Outlook Center in the ASU College of Business. The Center also forecasts a slight rise in oil prices during 1987; a continuation of inflation at manageable levels; an easing in interest rates through the first half of the year, then upward movement; and a further fall for the dollar against major foreign currencies. From the fourth quarter of this year into 1988, real growth should increase moderately, aided by a turnaround in foreign trade. For 1988 as a whole, real GNP should register growth of 3.3 percent (see Table 1).

A collapse in oil prices, reductions in inflation and interest rates, and a dollar plummeting against major foreign currencies characterized the national economy in 1986. While wage demands were kept in check, consumers fueled the economy by borrowing and spending. At year's end, consumer installment debt

See "U.S. Forecast," page 4



ARIZONA BUSINESS

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TABLE 1
1987 and 1988 ECONOMIC FORECASTS: ARIZONA

	Actual *1986*	Forecast *1987*	Forecast *1988*
Gross State Product			
Millions of 1982 Dollars	47,275	49,830	53,220
Percent Change	6.3[P]	5.4	6.8
Personal Income			
Millions of Current Dollars	44,200	47,471	51,600
Percent Change	8.4[P]	7.4	8.7
Retail Sales			
Millions of Current Dollars	17,187	18,300	19,690
Percent Change	6.3	6.5	7.6
Unemployment Rate			
Percent	6.9	7.6	7.3
Wage and Salary Employment			
Number in Thousands	1,341.4	1,400.8	1,474.1
Percent Change	4.9	4.4	5.2
Population			
Number in Thousands	3,332	3,452	3,572
Percent Change	4.1[P]	3.6	3.5
New Single Family Housing Units Permitted			
Number	34,079	32,000	32,600
Percent Change	2.4	-6.1	1.9
New Multifamily Housing Units Permitted[1]			
Number	27,008	17,600	15,800
Percent Change	-27.2	-34.8	-10.2

P - Projected

[1] Apartment complexes of three or more units

TABLE 2
1987 and 1988 ECONOMIC FORECASTS: MARICOPA COUNTY

	Actual *1986*	Forecast *1987*	Forecast *1988*
Consumer Price Index			
Percent Change	1.3	3.8	5.5
Retail Sales			
Millions of Current Dollars	11,372	12,135	13,100
Percent Change	5.0[P]	6.7	8.0
Unemployment Rate			
Percent	5.6	6.4	6.0
Wage and Salary Employment			
Number in Thousands	883.5	924.4	975.7
Percent Change	4.9	4.6	5.5
Population			
Number in Thousands	1,902	1,982	2,062
Percent Change	4.9[P]	4.2	4.0
New Single Family Housing Units Permitted			
Number	23,851	23,400	24,600
Percent Change	3.1	-1.9	5.1
New Multifamily Housing Units Permitted[1]			
Number	18,311	11,700	10,500
Percent Change	-32.9	-36.1	-10.3

P - Projected

[1] Apartment complexes of three or more units

Source (Tables 1 and 2): Economic Outlook Center, College of Business, Arizona State University

"AZ Forecast," from page 1

facturing sector. Revised statistics recently released by the Arizona Department of Economic Security indicate that manufacturing employment inched upward just 1.4 percent last year. Without the aggressive expansion of defense contractors, particularly in Maricopa County, manufacturing employment would have declined. By late 1986, even the state's aircraft and missile producers were in a holding pattern.

An improved international trade climate should allow Arizona manufacturing employment to rise 3.1 and 4.5 percent, respectively, in 1987 and 1988, with the durable goods category contributing most of the new jobs. This improvement is pivotal to the continued vigor of the regional economy. Construction, a prodigious producer of new jobs in recent years, and business and financial services are not expected to repeat the rapid growth in employment of the 1984-86 period.

Several factors are shaping the outlook for slower growth in the service-producing industries. Population gains, while still impressive, will not match the increases registered during the last two years. As a result, new jobs in personal services, real estate, retail trade and a variety of related categories may not be as plentiful as in recent times. Unexpected sluggishness in state revenue growth, combined with the uncertainties created by tax reform and the arrival of a new administration, promise to hold the growth of government employment below the rates recorded in 1985 and 1986.

The Center forecasts 4.4 percent growth in total wage and salary employment for 1987 and 5.2 percent for 1988, similar to the 4.9 percent gain observed last year (see Figure I for a breakout of the metropolitan and non-metropolitan areas). However, while the overall employment increase is expected to be comparable to gains of recent years, the composition may be different. At this stage of the economic cycle, the service-related sectors appear to be losing momentum. If the state's manufacturing firms rebound as anticipated this year, Arizona should continue to enjoy a period of relative prosperity.

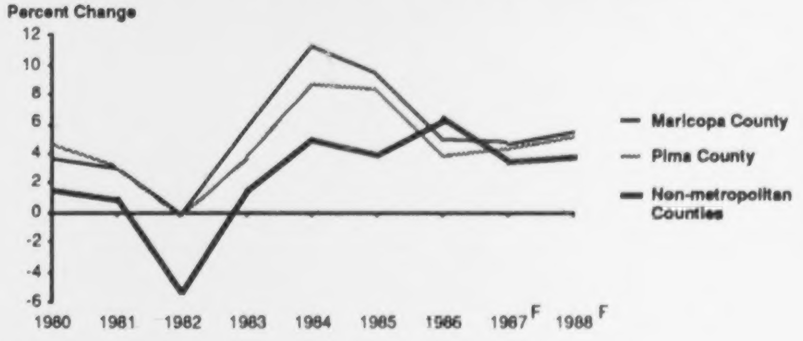
Even if new jobs materialize as expected, however, the unemployment rate still may exceed the national average through 1988. The Center projects continued growth in the state's labor force but at a pace that would preclude a major reduction in the jobless rate during the forecast period.

PERSONAL INCOME

Employment data revisions sent analysts scrambling to adjust their estimates of 1986 personal income. The Bureau of Economic Analysis, producer of the statistics, has estimated Arizona personal income only through third quarter 1986. Wage and salary disbursements, which constitute about 60 percent of total personal income, depend directly on employment statistics. Employment growth in Arizona was slower than the original estimates suggested, and the inflation rate, another critical element in personal income projections, plummeted to slightly more than 1 percent in 1986. These factors partially explain the perplexing weakness in state tax collections during the second half of 1986.

The Center predicts that Arizona personal income will increase 7.4 percent in 1987 and 8.7 percent in 1988 (see Figure II). While these gains are similar to the estimated increase for last year, a few differences exist. The wage and salary component will be suppressed somewhat by a decline in construction employment and slower growth in hiring by defense contractors, diminishing the contribution of two relatively well-paying industries. Fiscal austerity at all levels of government will tend to keep the growth of transfer payments in check. As the state economy moves into 1988, accelerating inflation will raise nominal incomes in general and, in particular, proprietors' income and interest payments.

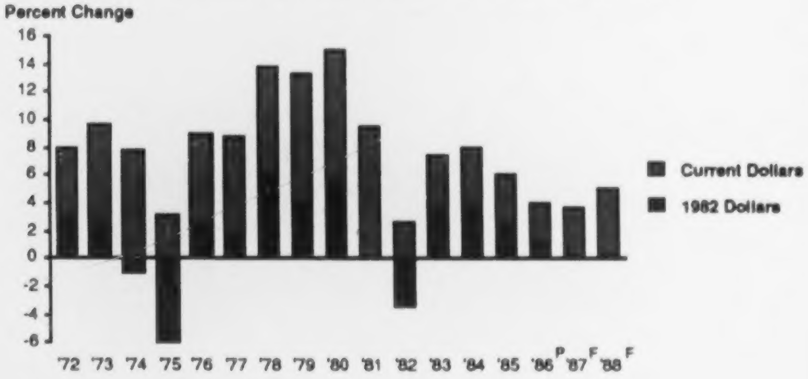
FIGURE I
ARIZONA EMPLOYMENT GROWTH, 1980-88
NON-AGRICULTURAL WAGE AND SALARY EMPLOYMENT



F Forecast

Source: Arizona Department of Economic Security; Economic Outlook Center, College of Business, Arizona State University

FIGURE II
ARIZONA PER CAPITA PERSONAL INCOME, 1972-88



P Projected

F Forecast

Source: Bureau of Economic Analysis, U.S. Department of Commerce; Economic Outlook Center, College of Business, Arizona State University

INFLATION

It appears now that the plunge in the 1986 inflation rate was a temporary episode brought on by collapsing world oil prices. The United States Consumer Price Index for January 1987 soared at an 8.7 percent annual rate, the largest increase in five years, illustrating that fuel prices can induce wide swings in both directions. With oil prices predicted to remain relatively stable for the next two years, inflation is anticipated to return to the levels of the 1984-85 period.

The Center expects the Metropolitan Phoenix Consumer Price Index to rise 3.8 percent, on average, this year and approximately 5.5 percent in 1988. These rates are slightly higher than those projected for the nation as a whole, a phenomenon often observed in rapidly expanding urban areas and characteristic of the pattern for the Phoenix area during the last 10 years.

CONSTRUCTION

Construction activity in Arizona is expected to slow somewhat but to remain at high levels for the duration of the forecast period. The generally overbuilt multifamily housing segment probably will show the most weakness, falling 34 percent to less than 18,000 units permitted in 1987. Next year, a smaller drop is anticipated, to almost 16,000 units permitted.

Mortgage interest rates reminiscent of the 1970s should prevent a precipitous decline in single family housing construction during the forecast period. Although single family permits are expected to post a small loss this year, the predicted number of new units – almost 32,000 in 1987 and about 32,500 in 1988 – remains in a range comparable to building activity of the last two years.

It is difficult to predict, in light of the significant changes in federal tax laws, the course of commercial and industrial construction in Arizona during1987. However, it looks as if major public works and road-building projects, especially in Maricopa County, will ensure brisk construction activity for years to come.

RISKS TO THE OUTLOOK

The accuracy of economic forecasts for the nation and for Arizona depends on the ability of American manufacturing firms, whether they produce lumber, computers, or automobiles, to grab a larger share of global markets than they have since 1984. Should the manufacturing sector fail to do so, a perceptible decline in economic growth will occur, perhaps resulting in a recession by 1989. Consequently, employment in Arizona's durable goods manufacturing sector will be a key indicator to watch in the months ahead. If the improvement in industrial production does not occur, it may be due to anemic economic growth in Japan, Europe and Latin America rather than to faltering competitiveness in the United States.

Another critical factor is the course that interest rates will follow during the next several months. If the fall of the dollar, perhaps in combination with higher inflation, were to make U.S. securities less attractive to foreign investors, interest rates would have to rise to attract the capital needed to finance the budget deficit. This sequence of events probably would curtail economic growth throughout the nation, most of all in expanding, capital-hungry states such as Arizona.

SUMMARY

Barring the developments outlined above, Arizona will continue to enjoy an enviable rate of economic growth in 1987 and 1988. Although the state's economy is unlikely to match the superlative performance of the mid-1980s, it is projected to expand much faster than the economies of the nation and most Western states.

– **Brian Cary**
Economist
Economic Outlook Center

New EOC Phone Number

With this issue of *Arizona Business*, the Economic Outlook Center (EOC) in the ASU College of Business has assumed authorship of the quarterly economic forecast articles. Questions related to the state and national economic outlooks should be directed to the EOC at its new phone number: (602) 965-5543.

TABLE 1
1987 and 1988 ECONOMIC FORECASTS: UNITED STATES
(Annual Average Percent Change)

	Actual	Forecast	
	1986	*1987*	*1988*
Real Gross National Product	2.5	2.5	3.3
OPEC Oil Price*	14.40	15.63	16.75
Consumer Price Index	1.9	3.2	4.1
Three-Month Treasury Bill Rate	6.0	5.5	6.7
U.S. Dollar vs. 10 Foreign Currencies	-21.6	-15.3	-10.8

*Dollars per barrel

Source: Economic Outlook Center, College of Business, Arizona State University

TABLE 2
CONTRIBUTIONS TO GROWTH IN REAL GNP
By Sector, 1986 – 1988
(Percentage Change from Prior Year)

	Actual	Forecast	
	1986	*1987*	*1988*
Real Gross National Product	2.5	2.5	3.3
Personal Consumption Expenditures	4.0	2.5	2.8
Gross Private Domestic Investment	1.9	0.6	6.8
Non-residential fixed	-1.4	-1.0	4.9
Residential fixed	9.4	3.7	2.8
Government Purchases of Goods and Services	3.7	2.5	0.1
Federal	3.0	1.8	-1.8
State and Local	4.3	3.1	1.7
Net Exports	-38.4	10.3	16.2
Exports	2.5	10.7	8.5
Imports	10.7	4.6	2.4

Source: Actual 1986 data are from the U.S. Department of Commerce, Bureau of Economic Analysis, Press Release BEA-87-02. Projections are by the Economic Outlook Center, College of Business, Arizona State University.

"U.S. Forecast," from page 1

amounted to 19 percent of disposable personal income. In addition to these influences, the phasing-in of tax reform and an improving real dollar net export balance should help push real GNP into positive growth for 1987 and 1988.

FORECAST BY SECTOR

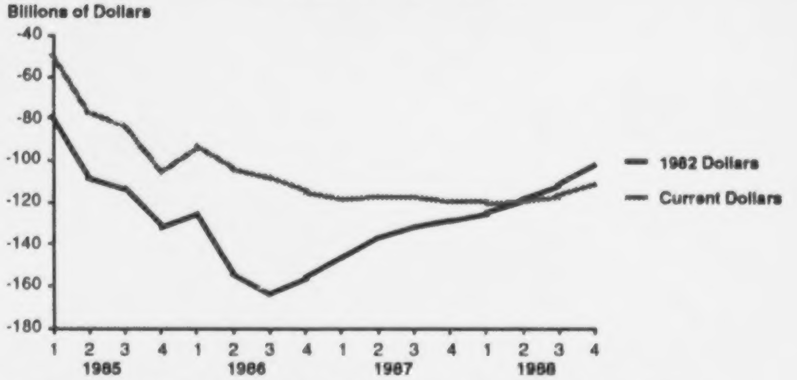
Consumption

Table 2 shows the 1986-88 contributions to growth in real GNP of the final demand categories. During the second and third quarters of 1986, consumer spending on durable goods, such as autos and appliances, reached record-high levels. Reductions in oil prices and interest rates, in addition to the stimulus of auto incentive programs, helped produce the 4 percent growth in consumption spending for the year. The outlook for 1987 appears positive but more subdued. Moderate income growth and high levels of indebtedness suggest consumer retrenching and, therefore, a modest increase in spending. Growth in 1988 consumer spending should come in higher (2.8 percent) due to the stimulating influences of tax reform and higher personal income growth.

Investment

Several factors should slow the growth of non-residential fixed investment during 1987: the severe overhang of excess capacity in commercial property, tax reform's limitations on sheltering income through limited partnerships, and the lengthening of depreciation periods for investment properties. Residential fixed investment – in particular, single-family housing – is expected to grow 3.7 percent and keep investment from turning negative in 1987. Aided by single-digit interest rates, single-family housing should remain strong in 1988. Additionally, business spending on investment goods should rebound in 1988 due to a turnaround in the trade picture.

FIGURE I
NET EXPORT BALANCES



Source: Economic Outlook Center, College of Business, Arizona State University

Public Sector

The specter, now declawed, of Gramm-Rudman-Hollings' deficit reduction targets, combined with generalized concern over the size of the federal deficit and its financing requirements, should result in little, if any, real growth in federal spending during 1987 and 1988. While defense spending will keep federal sector expenditures from turning negative in 1987, spending cutbacks in non-defense areas make for an overall picture of negative growth in 1988. If the administration's proposals for fiscal year 1988 come to fruition, in conformity with deficit reduction targets, the federal side of public spending will act as a brake on growth in real GNP.

For state and local governments, the spending picture does not offer much that will contribute to growth. Faced with the phase-out of revenue sharing and other federal funds, in addition to budget deficits triggered by slowing – even stagnating – economies, state and local governments are searching for alternative revenue sources just to maintain their existing level of services. While tax reform gives many states budgetary breathing room in 1987, the following year offers little in the way of relief. Overall, state and local spending should grow 3.1 and 1.7 percent, respectively, in 1987 and 1988.

Foreign Trade

The bright spot on the forecast horizon is the long-awaited turnaround in the trade picture, stimulated by the dollar's fall against major foreign currencies. With the dollar predicted to drop an additional 15 percent in 1987 and 11 percent in 1988, foreign producers will be hard-pressed to lower prices and take further cuts in profits. While the nominal export balance probably will continue to appear bleak in 1987 and 1988, real dollar trade should improve. Due to increased competitiveness with their foreign counterparts, U.S. producers will export a greater volume of goods and services. The nation's economy may finally be ascending the much heralded "J curve," which describes the behavior of the net export balance in light of currency devaluations (see Figure I). While imports probably will show modest growth in 1987 and 1988, real exports should increase 11 and 9 percent, respectively, in those years. On balance, net exports will exert less drag on U.S. growth performance.

MAJOR FORECAST RISKS

A major risk to this scenario of national economic growth is that improvement in the real trade balance may not materialize. U.S. producers, faced with reduced foreign competition, may perceive the turnaround as a chance to increase profits through higher prices. The effect would be short-lived since foreign producers would view this development as an opportunity to continue making inroads into U.S. markets. Additionally, the trade picture could deteriorate if the democratically-controlled Congress caves in to pressures for protectionist legislation. This shift in trade policy would do little to improve the export climate since foreign countries would be quick to retaliate by erecting barriers to entry against U.S. exports.

Another risk to the Center's forecast concerns the extent of the dollar's decline in relation to the willingness of foreign investors to finance the U.S. federal deficit through their purchase of government bonds. Foreign investors view U.S. government-issued bonds as a safe investment from the standpoint of political stability but also as one that carries exchange-rate risk. The decline in the dollar's value vis-a-vis other currencies is associated with a demand by foreign investors for higher interest rates to hold existing debt as well as to acquire newly-issued U.S. securities. Should the dollar decline precipitously in the immediate future, U.S. interest rates could rise enough to severely curtail U.S. growth.

A final risk to growth is tied to the price of oil and its link with inflation. If OPEC finds the discipline to enforce production quotas that significantly drive up the price of oil, world inflation would be reignited. For the United States, this development would trigger a shift in the Federal Reserve's policy from accommodating growth to favoring tighter money. The latter would bring higher interest rates and low (to zero) growth in real GNP.

– Jim Huyghebaert
Senior Economist
Economic Outlook Center

Arizona Economic Growth Near Predictions in '86

Throughout 1985 and 1986, the Center for Business Research, in its quarterly economic forecasts, predicted that the Arizona economy would expand at a moderately rapid rate in 1986, though more slowly than during 1985. Warnings were repeated that growth would be erratic temporally as well as by industry.

These projections generally were on target, making the Center one of the most accurate panelists contributing to the *Arizona Blue Chip* economic forecast. However, the Center, like all forecasters, badly overestimated the rate of inflation during 1986, and its real estate outlook was too pessimistic. Tables 1 and 2 compare actual 1986 results to the Center's forecasts issued between June 1985 and June 1986.

GSP AND PERSONAL INCOME

Based on three quarters of actual data, the latest projection of inflation-adjusted growth in Arizona Gross State Product is quite near each of the forecasts. Unadjusted personal income predictions originally were too high because of the unexpected deceleration in inflation. The GNP implicit price deflator, used to adjust personal income, rose just 2.6 percent during 1986, approximately one percentage point less than forecast.

INFLATION AND RETAIL SALES

At the consumer level, the differences between actual inflation and the forecasts were even greater. Direct and indirect effects of falling energy prices primarily accounted for the lower rate. As a result, unadjusted retail sales forecasts of nearly all prognosticators were too high, a factor contributing to the state's budget deficit. After adjusting for inflation, the Center's forecasts for Arizona retail sales were close to the actual results, but retail sales in Maricopa County still were weaker than anticipated.

EMPLOYMENT AND POPULATION

Predictions on job creation and the unemployment rate were near the actual values. Except for the Center's early 1985 forecasts, projections on population growth also were quite accurate.

TABLE 1
ECONOMIC FORECAST ACCURACY
Arizona, 1986

		Date of Forecast			
	Actual	*6/1/85*	*12/1/85*	*3/1/86*	*6/1/86*
Gross State Product					
Real Percent Change	6.3^{P}	6.4	6.0	6.2	5.9
Personal Income					
Current Percent Change	8.4^{P}	9.4	9.4	9.3	7.9
Retail Sales					
Current Percent Change	6.3	9.0	8.5	8.5	7.9
Unemployment Rate					
Percent	6.9	6.5	6.9	6.5	6.5
Wage and Salary Employment					
Percent Change	4.9	4.8	5.5	5.5	5.2
Population					
Percent Change	4.1^{P}	3.6	3.8	4.2	4.2
New Single Family Housing					
Number of Units Permitted	34,079	29,000	32,000	32,000	33,150
New Multifamily Housing					
Number of Units Permitted	27,008	15,000	20,000	24,000	24,300
Value of Building Permits					
Current Dollars (in millions)	5,410	4,000	5,000	4,650	5,075

P = Projected

TABLE 2
ECONOMIC FORECAST ACCURACY
Maricopa County, 1986

		Date of Forecast			
	Actual	*6/1/85*	*12/1/85*	*3/1/86*	*6/1/86*
Consumer Price Index					
Percent Change	1.3	6.2	5.4	4.7	2.0
Retail Sales					
Current Percent Change	5.0^{P}	9.5	9.3	9.4	7.6
Unemployment Rate					
Percent	5.6	5.3	5.4	5.2	5.1
Wage and Salary Employment					
Percent Change	4.9	5.5	5.9	5.9	5.2
Population					
Percent Change	4.9^{P}	3.9	4.1	4.6	4.6
New Single Family Housing					
Number of Units Permitted	23,851	20,000	22,000	22,000	22,550
New Multifamily Housing					
Number of Units Permitted	18,311	10,000	14,000	17,000	17,500
Value of Building Permits					
Current Dollars (in millions)	3,915	2,900	3,575	3,450	3,650

P = Projected

Source (Tables 1 and 2): **Center for Business Research, College of Business, Arizona State University**

REAL ESTATE

For the second consecutive year, the Center's projections on construction activity were too conservative. The reasons are the same as in 1985. First, interest rates declined more than expected throughout the year, boosting single family construction more than 4,000 units higher than the earliest forecasts for 1986. Second, commercial construction, particularly of office buildings and apartments, did not decline as much as expected. Further, retail and hotel construction soared to record levels. High vacancy rates did not slow new construction as rapidly as predicted, though by the second half of 1986, apartment construction had declined sharply.

– Tom R. Rex
Research Manager

Annual Arizona Construction Report

Residential Overtakes Commercial/Industrial To Drive Record Growth

After three consecutive years of record growth, the dollar value of Arizona construction activity remained virtually unchanged from the 1985 level, at $5.4 billion in 1986. Permit activity, however, declined slightly from 108,897 to 104,625 permits. In previous years, the commercial and industrial sectors were the forces driving construction industry growth. For 1986, these sectors posted declines, while the residential and "other" sectors recorded improvements over 1985.

Although total construction activity in Maricopa County declined from $4.0 billion to $3.9 billion, the metropolitan Phoenix area again predominated development, recording 72 percent of the state's total dollar value. With a 9 percent increase ($747 million to $817 million), Pima County continued to represent about 15 percent of the permitted activity. While the remaining 13 counties accounted for only 13 percent of total Arizona construction, activity improved significantly over last year in several counties, including Coconino and Mohave. Table 1 presents the leading areas of development activity for 1986.

SECTORAL ACTIVITY

Residential

Maricopa County. Mortgage interest rates continued to decline during 1986. For example, the average rate during 1986 for a 30-year conventional mortgage was 10 percent, in contrast to 12 percent for 1985. Like in 1985, declining interest rates provided little stimulation for the housing market. The single family sector grew only 3 percent. Although this sector may not be fulfilling expectations, it has recorded its fifth consecutive year of growth and its best year since the record 30,479 permits issued in 1978.

TABLE 1
REPORTING UNITS WITH GREATEST TOTAL VALUE OF BUILDING PERMITS
1986

Reporting Unit	Value *(in millions)*
Phoenix	$1,282
Mesa	585
Scottsdale	544
Tucson	407
Unincorporated Pima County	393
Unincorporated Maricopa County	337
Chandler	296
Tempe	295
Glendale	273
Peoria	123
Gilbert	118
Unincorporated Yavapai County	97

Source: Center for Business Research, College of Business, Arizona State University

Several factors may have contributed to the slow growth of the single family sector. First, the resale market increased significantly in 1986. Homebuyers appear to have turned to this market for more affordable homes (median price of $78,000) in well established neighborhoods. In addition, consumers still have high debt loads and need fairly low rates to induce them to further increase their debt. Finally, housing appreciation has not been strong enough to stimulate home purchasing.

Although permit activity remained fairly stable, total dollar value moved from $1.6 billion to $1.7 billion. Further, the median price of a new home increased from $83,200 to $89,375. Some of the price increase can be attributed to the continued growth of the move-up market. In 1986, 72 percent of new homes sold for more than $80,000, compared to 56 percent during 1985. With improved affordability in the detached single family home market, the townhouse/condominium market continued to be adversely affected, with only 2,928 sales (median value of $69,125).

Another factor affecting the new home market is that households have turned to remodeling, rather than purchasing a new home. Remodeling activity continued to improve during 1986.

Rest of Arizona. The single family sector in Pima County grew 8 percent during 1986. As in Maricopa County, total dollar value increased over 1985, which shows continued strengthening of the move-up market. As in 1985, 72 percent of the permitted homes were to be built in the unincorporated areas, while another 24 percent were recorded in Tucson.

In contrast to the metropolitan counties, single family permit activity decreased in the remaining counties. However, the mobile home sector continued to be an important element of the housing market (see Table 3).

Commercial

Maricopa County. While the retail and the hotel/motel sectors set new records in 1986, the office and multifamily sectors posted significant declines. This pattern of activity yielded a 10 percent drop in dollar value from the 1985 level and a 5 percent decrease in permits issued.

For the first time in three years, building activity in the single family sector exceeded that in the multifamily sector. Even with declining activity, the metropolitan vacancy rate for 1986 was 11 percent, in contrast to 10 percent in 1985.

In response to the much publicized concern about the office building market, development activity declined in 1986. In contrast, the retail sector established a new record, with permits issued primarily for strip and neighborhood centers.

The greatest increase in 1986 commercial construction activity was in the hotel/motel sector. This development represents a jump of more than 5,000 rooms, in comparison to a more modest gain of 2,300 rooms in 1985.

Rest of Arizona. Commercial development remained very stable in Pima County. Unlike in Maricopa County, multifamily activity increased, advancing 16 percent and again exceeding activity in the single family sector. Table 2 shows new office building activity declined in 1986, but the retail sector continued to improve. The hotel/motel sector rebounded.

Multifamily sector activity decreased sharply in the non-metropolitan counties. The decline in development activity was most evident in Sierra Vista, Flagstaff, and Casa Grande. For the last few years, the office building sector has remained consistent. The retail sector posted a correction from its 1985 decrease, improving strongly in 1986. The hotel/motel sector declined.

Industrial

Maricopa County. In 1985, the recorded level of construction activity was largely driven by a few large-scale, single-user projects. With a total absence of such projects in 1986, the value of industrial sector building permits dropped. This pattern was especially evident in Chandler and Mesa.

Rest of Arizona. A similar pattern was evident throughout the state, with industrial activity falling in Pima County. After several years of strong activity, no industrial permits were issued in Casa Grande. The highest level of activity was recorded in Flagstaff.

Other

This category includes a wide range of permitted activity, from churches to schools to swimming pools. In Maricopa County, dollar value increased 17 percent in 1986, while permit activity declined 1 percent. Primary areas of activity were health care facilities, religious buildings, and public buildings. The construction of public educational facilities has continually increased since 1984.

Led by permits for educational facilities, this sector in Pima County reported a 50 percent jump in dollar value, while the number of permits declined 2 percent. The non-metropolitan counties followed a similar pattern. Areas of activity included Eagar, Flagstaff, Apache Junction, and unincorporated Yuma County.

LOOKING AHEAD

At the beginning of 1986, most forecasts were for a good year based on stability. The year ended with results that were fairly close to most expectations. While total construction activity was very consistent, the emphasis changed over the year from commercial to residential development.

Since the Arizona economy should continue to expand during 1987, the Arizona Real Estate Center (AREC) expects construction activity to slow just 2 percent, from $5.4 billion to $5.3 billion. In Maricopa County, total construction activity probably will decline from $3.9 billion to $3.5 billion, but the level of activity will vary by sector. Despite these projected declines, 1987 should be the construction industry's fifth consecutive year of solid activity.

Even with stable interest rates, AREC expects the single family market to maintain an activity level comparable to the last few years. For 1987, 32,000 homes should be permitted in Arizona, with 23,400 of them in Maricopa County. The ongoing strength of the single family market should cause the multifamily sector to continue its decline, to 17,600 units (11,700 units in Maricopa County). Even though it represents a significant decline from the last few years, the projected level of activity is solid, on historical grounds, and can reasonably be absorbed by the market.

In the commercial sector, all segments are expected to decline. Within Maricopa County, several large office building projects are expected to commence in 1987, so this sector could remain fairly consistent. Much like the office building market of 1986, concern is increasing about the continued strength and depth of the retail and hotel/motel sectors. Hence, both are expected to decline during 1987, with the greatest decrease occurring in the hotel/motel sector.

Because of rapid population growth, especially in Maricopa County, public projects are expected to continue as an important area of construction activity. In fact, road building, which is not a permitted activity, promises to be a major source of construction activity and employment.

Since construction activity tends to be strongest while a positive economic climate prevails, the expected moderate economic growth implies limited building. This moderate growth, coupled with the rapid expansion of certain construction sectors, establishes complex relationships that make it difficult to project construction activity. However, the consensus is for a decline during 1987, with potential for a moderate upturn in 1988.

– Jay Q. Butler

Dr. Butler is Associate Professor of Real Estate and Director of the Arizona Real Estate Center in the ASU College of Business.

New AREC Phone Number

Questions related to the Arizona real estate industry and construction activity should be directed to the Arizona Real Estate Center (AREC) in the ASU College of Business. The new AREC phone number is (602) 965-5440.

TABLE 2
KEY SECTOR CONSTRUCTION ACTIVITY
(1985 and 1986)

			COMMERCIAL							
	SINGLE FAMILY		APARTMENTS[a]		OFFICE BUILDINGS[b]		RETAIL STORES[c]		INDUSTRIAL	
	Number of Permits	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*
Maricopa County										
1986	23,851	1,706,112,000	1,056	491,174,912	294	249,816,784	1,214	335,460,608	339	145,886,286
1985	23,143	1,572,602,865	1,513	667,325,334	454	384,594,988	985	257,268,922	606	306,126,441
Pima County										
1986	4,526	302,769,632	220	159,300,416	104	59,594,016	121	46,609,344	29	5,900,296
1985	4,160	252,427,104	204	139,417,258	121	104,160,842	80	22,369,581	76	39,299,697
Rest of Arizona										
1986	5,702	314,563,611	113	39,586,752	155	17,893,904	273	41,703,744	109	13,801,046
1985	5,968	282,496,084	209	81,277,421	155	16,247,037	315	29,716,524	124	32,463,710
Arizona Total										
1986	34,079	2,323,465,243	1,389	690,062,060	553	327,304,704	1,608	423,773,696	477	165,187,630
1985	33,271	2,107,526,113	1,926	908,020,013	730	505,002,867	1,380	309,255,027	806	379,889,848

[a] Five or more housing units

[b] Office, bank, medical and professional buildings

[c] Shopping centers and other mercantile buildings

Source: Center for Business Research, College of Business, Arizona State University

TABLE 3
ARIZONA HOUSING UNITS AUTHORIZED: ANNUAL REPORT
January - December 1986

	One Family	*Mobile Homes*	*Duplex*	*3-4 Family*	*5 or More*	*Total*
APACHE COUNTY						
Eagar	27	28	0	0	0	55
St. Johns	10	14	0	0	0	24
Springerville	6	0	0	0	0	6
Unincorporated	47	14	0	0	0	61
Total, Apache County	90	56	0	0	0	146
Percent Change, Previous Year	-16	43	–	–	–	-12
COCHISE COUNTY						
Benson	3	23	0	3	0	29
Bisbee	36	30	0	0	24	90
Douglas	13	0	0	12	0	25
Huachuca City	0	0	0	0	0	0
Sierra Vista	92	40	0	24	429	585
Tombstone	1	10	0	0	5	16
Unincorporated	326	258	12	4	6	606
Willcox	8	5	0	0	0	13
Total, Cochise County	479	366	12	43	464	1,364
Percent Change, Previous Year	40	22	–	258	-55	-19
COCONINO COUNTY						
Flagstaff	305	84	34	3	97	523
Fredonia	2	25	0	0	0	27
Page	31	67	0	4	0	102
Unincorporated	380	235	4	0	41	660
Williams	3	3	0	0	0	6
Total, Coconino County	721	414	38	7	138	1,318
Percent Change, Previous Year	0	-6	-17	-22	-73	-23
GILA COUNTY						
Globe	4	0	0	0	0	4
Hayden	0	1	0	0	0	1
Miami	1	0	2	0	0	3
Payson	87	100	2	3	28	220
Unincorporated	207	148	0	0	0	355
Total, Gila County	299	249	4	3	28	583
Percent Change, Previous Year	-1	29	0	-75	-29	5
GRAHAM COUNTY						
Pima	3	11	0	0	0	14
Safford	9	5	0	3	0	17
Thatcher	17	29	0	0	0	46
Unincorporated	21	130	0	0	0	151
Total, Graham County	50	175	0	3	0	228
Percent Change, Previous Year	-31	4	0	-25	0	-8
GREENLEE COUNTY						
Clifton	0	0	0	0	0	0
Duncan	3	0	0	0	0	3
Unincorporated	0	0	0	0	0	0
Total, Greenlee County	3	0	0	0	0	3
Percent Change, Previous Year	50	–	0	0	0	-25
LA PAZ COUNTY						
Parker	39	202	0	0	0	241
Unincorporated	6	32	0	0	0	38
Total, La Paz County	45	234	0	0	0	279
Percent Change, Previous Year	125	75	–	–	–	82
MARICOPA COUNTY						
Avondale	146	77	8	4	14	249
Buckeye	16	40	0	0	80	136
Chandler	2,216	0	0	8	612	2,836
El Mirage	8	69	0	4	16	97
Gila Bend	1	0	0	0	0	1
Gilbert	912	1	238	0	27	1,178
Glendale	2,040	204	4	4	3,271	5,523
Goodyear	0	36	0	0	0	36
Guadalupe	0	0	0	0	0	0
Mesa	3,367	0	46	170	3,659	7,264
Paradise Valley	68	0	0	0	0	68
Peoria	2,183	15	12	0	8	2,218
Phoenix	6,048	29	22	300	6,514	12,913
Scottsdale	1,882	1	6	70	1,370	3,329
Surprise	N/R	N/R	N/R	N/R	N/R	N/R
Tempe	858	0	6	62	1,572	2,498
Tolleson	7	0	0	0	0	7
Unincorporated	4,055	1,133	0	142	332	5,662
Wickenburg	19	0	2	4	0	25
Youngtown	5	0	0	24	44	73
Total, Maricopa County	23,851	1,605	346	792	17,519	44,113
Percent Change, Previous Year	3	-30	-52	-36	-32	-17
MOHAVE COUNTY						
Kingman City	92	86	0	12	144	334
Kingman Area	60	243	0	0	5	308
Lake Havasu City	436	22	10	0	73	541
Lake Havasu Area	7	31	0	0	0	38
Bullhead City	169	205	0	44	48	466
Mohave Valley South	69	300	0	0	0	369
Dolan Springs	28	62	0	0	0	90
Sacramento Valley	43	128	0	0	0	171
Mohave General	25	81	0	0	0	106
Total, Mohave County	929	1,158	10	56	270	2,423
Percent Change, Previous Year	-13	-38	150	-50	45	-25
NAVAJO COUNTY						
Holbrook	6	33	0	0	0	39
Pinetop-Lakeside	37	6	0	0	32	75
Show Low	28	34	0	0	0	62
Snowflake	9	3	2	0	0	14
Taylor	5	0	0	0	0	5
Unincorporated	272	9	0	0	0	281
Winslow	16	19	0	0	0	35
Total, Navajo County	373	104	2	0	32	511
Percent Change, Previous Year	-41	-70	0	–	33	-50
PIMA COUNTY						
Marana	5	34	0	0	0	39
Oro Valley	111	0	0	0	0	111
South Tucson	4	1	0	241	0	246
Tucson	1,113	441	98	43	4,648	6,343
Unincorporated	3,293	1,068	0	0	1,647	6,008
Total, Pima County	4,526	1,544	98	284	6,295	12,747
Percent Change, Previous Year	8	-26	-58	140	16	5
PINAL COUNTY						
Apache Junction	132	370	16	20	56	594
Casa Grande	79	0	10	6	7	102
Coolidge	5	19	0	0	0	24
Eloy	3	31	0	0	0	34
Florence	6	38	0	0	0	44
Kearny	1	12	0	0	0	13
Mammoth	3	0	0	0	0	3
Superior	0	0	0	0	0	0
Unincorporated	304	463	4	10	0	781
Total, Pinal County	533	933	30	36	63	1,595
Percent Change, Previous Year	6	4	-58	-48	-93	-35
SANTA CRUZ COUNTY						
Nogales	N/R	N/R	N/R	N/R	N/R	N/R
Patagonia	0	13	0	0	0	13
Unincorporated	118	38	16	4	0	176
Total, Santa Cruz County	118	51	16	4	0	189
Percent Change, Previous Year	22	-68	700	-69	–	-31
YAVAPAI COUNTY						
Chino Valley	N/R	N/R	N/R	N/R	N/R	N/R
Clarkdale	28	29	0	0	56	113
Cottonwood	31	19	22	14	80	166
Jerome	0	0	0	0	0	0
Prescott	266	54	8	8	138	474
Prescott Valley	181	121	14	40	0	356
Unincorporated	999	378	10	53	60	1,500
Total, Yavapai County	1,669	615	54	118	334	2,790
Percent Change, Previous Year	12	-34	-15	-31	48	-3
YUMA COUNTY						
Somerton	13	6	0	0	0	19
Unincorporated	155	475	2	0	0	632
Wellton	0	0	0	0	0	0
Yuma	225	51	4	13	506	799
Total, Yuma County	393	532	6	13	506	1,450
Percent Change, Previous Year	-21	-20	0	-87	-49	-36
TOTAL, ARIZONA	34,079	8,036	616	1,359	25,649	69,739
PERCENT CHANGE, PREVIOUS YEAR	2	-24	-46	-26	-27	-15

N/R: No Report

Note: A dash indicates that a percent change could not be calculated because at least one period had no activity.

Source: Center for Business Research, College of Business, Arizona State University

TABLE 4
ARIZONA BUILDING PERMITS: ANNUAL REPORT
January – December 1986

	Residential*		Commercial		Industrial		Other		Total	
	Number of Permits	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*
APACHE COUNTY										
Eager	72	2,451,395	3	138,600	0	0	7	1,236,870	82	3,826,865
St. Johns	24	N/C	2	N/C	0	0	0	0	26	N/C
Springerville	13	193,900	8	293,000	0	0	10	1,355,092	31	1,841,992
Unincorporated	83	2,726,057	0	0	0	0	16	115,824	99	2,841,881
Total, Apache County	192	5,371,352	13	431,600	0	0	33	2,707,786	238	8,510,738
Percent Change, Previous Year	0	0	-23	-33	0	0	64	5,834	3	39
COCHISE COUNTY										
Benson	42	467,556	9	3,458,720	2	7,000	31	2,567,572	84	6,500,848
Bisbee	129	2,664,411	3	885,000	0	0	9	124,416	141	3,673,827
Douglas	166	4,360,324	11	1,190,954	1	255,000	120	417,056	298	6,223,334
Huachuca City	38	115,261	3	90,700	0	0	4	146,720	45	352,681
Sierra Vista	338	6,022,374	34	10,344,687	5	533,880	372	1,304,680	749	18,205,621
Tombstone	56	125,725	13	180,825	0	0	27	31,080	96	337,610
Unincorporated	682	23,528,290	20	1,147,867	3	270,000	104	5,219,762	809	30,165,919
Willcox	48	246,900	2	28,638	4	50,250	50	301,170	104	626,958
Total, Cochise County	1,499	37,530,841	95	17,327,391	15	1,116,130	717	10,112,436	2,326	66,086,798
Percent Change, Previous Year	37	63	39	-48	50	-48	-40	-28	-1	-9
COCONINO COUNTY										
Flagstaff	530	26,167,347	59	15,181,691	12	4,976,500	294	22,975,387	895	69,300,925
Fredonia	30	59,000	2	101,200	0	0	9	33,300	41	193,500
Page	133	4,081,987	9	1,198,613	4	401,452	34	351,258	180	6,033,310
Unincorporated	1,122	25,413,941	15	2,248,041	4	91,653	151	6,416,358	1,292	34,169,993
Williams	22	511,506	2	385,495	0	0	43	242,401	67	1,139,402
Total, Coconino County	1,837	56,233,781	87	19,115,040	20	5,469,605	531	30,018,704	2,475	110,837,130
Percent Change, Previous Year	0	12	-1	12	53	375	13	92	3	32
GILA COUNTY										
Globe	32	424,035	2	540,000	0	0	27	276,585	61	1,240,620
Hayden	5	5,600	0	0	0	0	11	4,410	16	10,010
Miami	9	65,300	0	0	0	0	2	20,000	11	85,300
Payson	431	8,037,293	15	1,375,736	1	36,860	74	1,075,082	521	10,524,971
Unincorporated	524	12,907,536	23	916,160	5	55,500	45	2,035,852	597	15,915,050
Total, Gila County	1,001	21,439,766	40	2,831,896	6	92,360	159	3,411,929	1,206	27,775,951
Percent Change, Previous Year	11	19	21	-10	-53	-81	-3	-6	8	9
GRAHAM COUNTY										
Pima	25	362,900	2	16,000	0	0	14	16,800	41	395,700
Safford	77	976,194	17	440,750	1	2,500	29	3,284,160	124	4,703,604
Thatcher	69	1,812,540	2	66,000	0	0	12	60,600	83	1,939,140
Unincorporated	208	3,087,296	8	211,200	0	0	24	307,619	240	3,606,115
Total, Graham County	379	6,238,930	29	733,950	1	2,500	79	3,669,179	488	10,644,559
Percent Change, Previous Year	-13	4	-19	47	-75	-98	-12	24	-14	11
GREENLEE COUNTY										
Clifton	1	4,500	0	0	0	0	0	0	1	4,500
Duncan	11	51,800	0	0	0	0	3	90,300	14	142,100
Unincorporated	3	7,000	0	0	0	0	1	1,000	4	8,000
Total, Greenlee County	15	63,300	0	0	0	0	4	91,300	19	154,600
Percent Change, Previous Year	36	-30	0	0	0	0	100	1,013	46	56
LA PAZ COUNTY										
Parker	289	1,496,968	3	159,000	1	1,300	56	221,958	349	1,879,226
Unincorporated	53	753,977	3	98,194	0	0	34	135,869	90	988,040
Total, La Paz County	342	2,250,946	6	257,194	1	1,300	90	357,827	439	2,867,267
Percent Change, Previous Year	40	-39	-72	-77	-50	-97	-65	-78	-17	-56
MARICOPA COUNTY										
Avondale	244	9,611,741	13	5,253,268	3	163,040	152	764,729	412	15,792,778
Buckeye	60	753,000	2	1,383,500	0	0	5	2,542,400	67	4,678,900
Chandler	2,660	133,132,262	172	77,859,001	48	18,365,877	3,577	65,321,028	6,457	294,678,168
El Mirage	100	2,022,628	8	1,405,427	0	0	27	253,215	135	3,681,270
Gila Bend	8	58,600	0	0	1	170,000	19	983,001	28	1,211,601
Gilbert	1,105	79,559,721	26	5,962,408	5	3,617,641	595	28,494,713	1,731	117,634,483
Glendale	2,576	132,956,384	381	116,529,908	16	3,586,040	1,527	20,192,193	4,500	273,264,525
Goodyear	59	156,963	1	41,850	1	15,000	99	189,377	160	403,190
Guadalupe	0	0	0	0	0	0	1	1,080	1	1,080
Mesa	3,989	233,115,154	322	217,997,744	30	16,223,759	3,286	117,455,457	7,627	584,792,114
Paradise Valley	244	18,086,457	1	18,000	0	0	278	3,360,488	523	21,444,945
Peoria	2,354	100,084,522	53	12,821,009	12	1,061,570	1,423	9,522,815	3,842	123,489,916
Phoenix	9,037	434,387,907	1,076	589,614,467	115	41,951,006	7,229	216,153,560	17,457	1,282,106,940
Scottsdale	2,242	303,641,367	273	146,151,780	4	1,376,350	1,869	92,844,025	4,388	544,013,512
Surprise	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Tempe	1,263	85,134,100	422	109,748,522	97	44,045,600	1,409	55,800,700	3,191	294,728,922
Tolleson	39	403,645	3	1,099,000	3	11,048,000	21	266,581	66	12,817,226
Unincorporated	7,038	254,601,095	533	50,466,638	3	4,035,610	5,720	27,763,224	13,294	336,866,567
Wickenburg	25	1,002,620	3	387,000	1	27,000	9	366,160	38	1,782,780
Youngtown	12	250,300	141	1,541,000	0	0	18	231,000	171	2,022,300
Total, Maricopa County	33,055	1,788,918,456	3,430	1,338,280,522	339	145,686,493	27,264	642,505,746	64,088	3,915,391,217
Percent Change, Previous Year	-1	7	-5	-10	-44	-52	-1	17	-2	-2

Arizona Building Permits: Annual Report (continued)

	Residential*		Commercial		Industrial		Other		Total	
	Number of Permits	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*	*Number of Permits*	*Dollar Value*
MOHAVE COUNTY										
Kingman City	262	4,001,784	15	5,650,072	1	25,600	87	808,588	365	10,486,044
Kingman Area	714	7,497,634	10	632,309	1	462,733	310	684,702	1,035	9,277,378
Lake Havasu City	574	24,617,702	27	5,093,972	10	1,230,030	246	1,832,209	857	32,773,913
Lake Havasu Area	79	870,439	6	412,256	0	0	41	105,402	126	1,388,097
Bullhead City	851	17,536,902	35	10,786,990	1	24,500	247	3,591,224	1,134	31,939,616
Mohave Valley South	813	10,515,051	18	2,044,642	0	0	321	1,129,313	1,152	13,689,006
Dolan Springs	197	2,387,035	1	23,328	0	0	79	191,743	277	2,602,106
Sacramento Valley	274	3,747,795	4	61,956	0	0	96	333,951	374	4,143,702
Mohave General	140	1,786,715	3	94,200	1	768	44	186,310	188	2,067,993
Total, Mohave County	3,904	72,961,057	119	24,799,725	14	1,743,631	1,471	8,863,442	5,508	108,367,855
Percent Change, Previous Year	-4	18	-64	3	16	-12	-24	4	-13	13
NAVAJO COUNTY										
Holbrook	57	1,080,000	6	331,000	0	0	4	55,000	67	1,466,000
Pinetop-Lakeside	97	2,444,710	7	1,083,124	0	0	88	396,464	192	3,924,298
Show Low	113	3,081,995	12	429,437	2	190,320	121	800,234	248	4,501,986
Snowflake	29	125,000	3	45,000	0	0	0	0	32	170,000
Taylor	9	224,000	0	0	0	0	2	10,000	11	234,000
Unincorporated	464	13,027,895	9	763,297	5	404,552	99	922,885	577	15,118,629
Winslow	75	1,205,962	4	207,780	0	0	26	111,450	105	1,525,192
Total, Navajo County	844	21,189,562	41	2,859,638	7	594,872	340	2,296,033	1,232	26,940,105
Percent Change, Previous Year	-40	-14	-8	-31	75	262	24	-31	-28	-17
PIMA COUNTY										
Marana	44	131,000	1	30,000	0	0	16	88,700	61	249,700
Oro Valley	119	7,319,538	1	30,000	0	0	103	1,660,066	223	9,009,604
South Tucson	49	551,903	17	4,757,903	1	362,496	45	1,012,862	112	6,685,164
Tucson	3,226	78,895,730	274	224,732,789	3	595,500	4,018	103,244,277	7,521	407,468,296
Unincorporated	5,842	237,475,922	197	83,355,000	25	4,942,300	2,334	67,702,100	8,398	393,475,322
Total, Pima County	9,280	324,374,093	490	312,905,692	29	5,900,296	6,516	173,708,005	16,315	816,888,086
Percent Change, Previous Year	-8	13	-1	1	-61	-84	-2	50	-6	9
PINAL COUNTY										
Apache Junction	599	16,782,974	16	7,094,894	2	212,800	583	3,472,574	1,200	27,563,242
Casa Grande	117	6,478,443	14	1,556,235	0	0	128	4,060,063	259	12,094,741
Coolidge	63	606,627	3	60,947	1	240,000	65	179,865	132	1,087,439
Eloy	42	530,686	4	147,544	3	572,553	26	326,920	75	1,577,703
Florence	117	1,213,293	5	127,000	0	0	43	437,855	165	1,778,148
Kearny	26	85,375	0	0	0	0	10	14,550	36	99,925
Mammoth	6	40,900	0	0	0	0	3	N/C	9	40,900
Superior	8	15,560	0	0	0	0	11	21,679	19	37,239
Unincorporated	967	14,553,456	42	6,545,400	9	290,000	345	2,109,735	1,363	23,498,591
Total, Pinal County	1,945	40,307,314	84	15,532,020	15	1,315,353	1,214	10,623,241	3,258	67,777,928
Percent Change, Previous Year	6	15	-39	-51	-6	-92	-7	-2	-1	-28
SANTA CRUZ COUNTY										
Nogales	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Patagonia	27	157,969	2	1,600	0	0	8	17,580	37	177,149
Unincorporated	182	6,869,354	4	474,500	1	143,000	22	511,069	209	7,997,923
Total, Santa Cruz County	209	7,027,323	6	476,100	1	143,000	30	528,649	246	8,175,072
Percent Change, Previous Year	-23	29	0	0	0	-79	-11	18	-21	15
YAVAPAI COUNTY										
Chino Valley	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R
Clarkdale	64	2,962,080	3	1,236,960	0	0	43	1,814,888	108	6,015,971
Cottonwood	138	3,126,274	33	4,236,769	9	986,464	59	704,677	239	9,056,204
Jerome	17	N/C	0	0	0	0	0	0	17	N/C
Prescott	550	19,692,053	45	9,274,412	0	0	383	3,653,780	978	32,620,245
Prescott Valley	462	10,898,715	44	2,015,233	1	50,000	27	255,955	534	13,219,903
Unincorporated	1,958	81,020,308	88	6,764,000	5	315,722	636	9,163,554	2,687	97,263,584
Total, Yavapai County	3,189	117,701,430	211	23,527,304	15	1,352,186	1,150	15,692,854	4,565	158,273,884
Percent Change, Previous Year	-9	22	27	-23	-16	-46	13	1	-3	10
YUMA COUNTY										
Somerton	26	600,118	3	397,000	0	0	30	38,502	59	1,035,620
Unincorporated	877	22,958,928	24	1,482,351	13	1,588,406	419	10,023,902	1,333	36,053,587
Wellton	8	11,900	1	2,000	0	0	3	5,500	12	19,400
Yuma	445	15,540,250	78	22,799,611	1	181,498	294	6,040,462	818	44,561,821
Total, Yuma County	1,356	39,111,196	106	24,680,962	14	1,769,904	746	16,108,366	2,222	81,670,428
Percent Change, Previous Year	-14	-11	-47	-36	-54	-69	27	38	-7	-18
TOTAL, ARIZONA	59,047	2,540,719,347	4,757	1,783,759,124	477	165,187,830	40,344	920,695,497	104,625	5,410,361,998
PERCENT CHANGE, PREVIOUS YEAR	-2	9	-9	-10	-40	-56	-3	23	-3	0

*Includes mobile homes

N/R: No Report

N/C: Some communities do not collect dollar valuations.

Note: A dash indicates that a percent change could not be calculated because at least one period had no activity.

Source: Center for Business Research, College of Business, Arizona State University

1986 Home Sales Increase Throughout Valley

Home sales were up in 1986 for all of the larger cities in the Phoenix metropolitan area, contributing to a Valleywide 13 percent gain over 1985 figures. Sales skyrocketed 44 to 60 percent in Gilbert, Fountain Hills and Peoria (see Table 1); the latter two cities led the 1985 advance as well. In contrast, the number of homes sold rose less than 5 percent in Phoenix, Glendale and Sun City West; the latter city also trailed in 1985.

During 1986, the number of new single family homes sold declined for the Valley as a whole but jumped 42 percent in Peoria. New townhouse and condominium sales, which rose 7 percent overall, shot up in Peoria and Scottsdale but fell in Phoenix, Tempe and Glendale. The number of existing homes sold increased in all cities, with the exception of single family homes in Sun City West.

Resale single family homes accounted for nearly 70 percent of the homes sold in the Phoenix area during 1986. However, in Sun City West, the number of new single family homes sold exceeded existing home sales in that category; in Peoria, the numbers were nearly equal.

Mesa's new townhouse and condominium sales exceeded the number sold in Phoenix. In all other housing categories, sales in Phoenix greatly outnumbered those in all other cities.

TABLE 1
1986 HOME SALES, MEDIAN SALES PRICE AND PERCENT CHANGE FROM 1985
Metropolitan Phoenix, by City

City	Number of Sales	Percent Change	Median Sales Price[1]	Percent Change
Chandler	4,300	25%	$86.0	4%
Fountain Hills	500	60	93.0	16
Gilbert	250	44	67.5	1
Glendale	3,200	3	77.0	3
Mesa	9,775	17	76.0	6
Paradise Valley	350	19	295.1	17
Peoria	2,550	49	78.0	5
Phoenix	24,850	5	71.8	5
Scottsdale	5,200	24	108.0	7
Sun City	1,700	10	69.0	3
Sun City West	1,150	4	92.9	3
Tempe	3,375	10	77.7	2
MARICOPA CO. TOTAL[2]	63,500	13	78.0	5

[1] In thousands

[2] Total does not add to sum of cities because of exclusion from table of small cities and unincorporated areas.

TABLE 2
1986 MEDIAN SALES VALUES AND PERCENT CHANGES FROM 1985
Resale Single Family Homes Only

City	Median Price Per Square Foot	Percent Change	Median Size (in feet)	Percent Change
Chandler	$57.0	5%	1,460	3%
Fountain Hills	59.1	3	1,720	0
Gilbert	50.2	2	1,360	1
Glendale	50.1	3	1,550	-1
Mesa	53.5	4	1,430	2
Paradise Valley	96.5	3	3,260	7
Peoria	53.3	7	1,340	5
Phoenix	50.7	3	1,400	1
Scottsdale	60.1	4	1,840	4
Sun City	51.9	1	1,470	3
Sun City West	60.2	1	1,680	4
Tempe	53.0	2	1,570	0
MARICOPA CO. TOTAL	52.6	4	1,460	2

Source (Tables 1 and 2): Center for Business Research, College of Business, Arizona State University

HOME PRICES

The median sales price of all homes sold during 1986 rose between 3 and 7 percent in most cities, near the metro area figure of 5 percent. However, prices rose only 1 percent in Gilbert and 2 percent in Tempe. In contrast, 16 to 17 percent gains were realized in Paradise Valley and Fountain Hills, but the median price had fallen 5 percent during 1985 in Fountain Hills. Cities with relatively few sales, especially those with more expensive housing, can experience wide yearly swings in median sales prices.

In Paradise Valley and Scottsdale, the 1986 median sales price exceeded $100,000; it was lowest in Gilbert at $67,500. Homes sold in Fountain Hills and Sun City West also were priced well above the Valley median of $78,000. The median sales price is a function of the size of homes sold and the price per square foot (see Table 2).

Resale single family homes sold in Paradise Valley were much larger and much more expensive per square foot than in any other Valley city. Also above average on both measures were homes sold in Scottsdale, Fountain Hills and Sun City West. Homes in Gilbert and Glendale sold for the lowest price per square foot. The smallest homes sold were in Peoria and Gilbert.

The median price per square foot of resale single family homes sold during 1986 advanced less than the median sales price because of a small increase in home size. Variation among cities in 1986 percent change was not large for either median size or median price per square foot.

– Tom R. Rex
Research Manager

'87 Real Estate Industry Survey

Metro Phoenix Activity Expected To Decline Slightly

Metropolitan Phoenix real estate activity during 1987 is expected to be slightly below 1986 levels. This outlook represents the consensus of four real estate groups in Maricopa County: homebuilders, financial services (banks, savings and loan associations, and mortgage bankers), real estate brokerages (commercial and residential), and "other" entities (appraisal, development, title insurance and property management firms, and government). They were surveyed during December 1986 and January 1987 by *Phoenix Metro* magazine and the Arizona Real Estate Center.

ECONOMIC OUTLOOK

Respondents believe economic conditions will be weaker in 1987 than in 1986. The expectation of economic downturn is more prevalent in the 1987 survey than in 1986 (Table 1). Generally, 51 percent foresee improvement in the local economy; however, they anticipate a worse performance nationally – only 30 percent are confident that the federal government's economic policy will lead to an improving economy.

Projections of specific indicators are illustrated in Table 2. Respondents expect the same increase in the Phoenix inflation rate; only 26 percent are confident that inflation will decline in 1987. They also believe that Phoenix unemployment will increase over the low 1986 level and that interest rates will remain largely unchanged during 1987. The greatest variance concerns the apartment vacancy rate, with forecasts ranging from 3 percent to 25 percent.

REAL ESTATE OUTLOOK

In keeping with the forecast for a slight economic downturn, the 1987 outlook is for the local real estate market to be fairly comparable to the 1986 market. Only 44 percent of the respondents are confident that the real estate market will improve. They expressed a similar level of confidence in the new home market. The fundamental concern is that only 40 percent of the respondents expect mortgage interest rates to decline in 1987.

They believe other measures of real estate activity will be similar in 1987 to 1986 and foresee little or no increase in home prices (Table 2). After a very strong year in 1986, respondents expect the resale market to remain unchanged. They also predict single family permits in the 20,000 to 24,999 range for 1987, identical to the 1986 survey forecast. While opinions differ greatly on the vacancy rate for apartments, nearly 70 percent foresee rents increasing approximately 4 percent.

As in several past surveys, more than 70 percent of the respondents are confident that their business activity will improve in 1987, and they expect a median gain of 7 percent.

SUMMARY

Respondents to the 1987 survey are not as optimistic as their 1986 counterparts. They basically foresee a weaker showing for 1987. However, given the relatively high level of market activity in 1986, the expectations of somewhat lower levels in 1987 are tantamount to forecasting another fairly good year for the Arizona real estate industry.

– Jay Q. Butler

Dr. Butler is Associate Professor of Real Estate and Director of the Arizona Real Estate Center in the ASU College of Business.

TABLE 1
REAL ESTATE INDUSTRY SURVEY: ECONOMIC OUTLOOK SCORES*

Economic Variable	1987	1986
Consumer confidence	44	57
Phoenix area economy	51	65
Retail sales	47	58
National economy	32	49
Phoenix employment	45	58
National employment	32	46
Business confidence	43	54

* Metropolitan Phoenix real estate industry representatives had three reply options to each survey question: Higher, Same or Lower. The score for each question was calculated by averaging the weighted replies. The weights: Higher - 100; Same - 50; Lower - 0. Scores may range from 0 to 100, with higher scores reflecting a greater degree of optimism. Scores near 50 indicate an expectation of no change; scores above 50 indicate expected improvement, and scores below 50 indicate expected worsening.

Source: Survey conducted by the Arizona Real Estate Center in the College of Business, Arizona State University; in cosponsorship with *Phoenix Metro* magazine, December 1986 and January 1987.

TABLE 2
REAL ESTATE INDUSTRY SURVEY
1987 CONSENSUS OUTLOOK COMPARED TO ACTUAL 1986
Metropolitan Phoenix

	Percentage Rate		
Variable	*1986 Projection*	*Actual Year-end,1986*	*1987 Projection*
Conventional mortgage rate	11.5	9.2	9.5
FHA mortgage rate	11.0	9.0	9.0
Prime interest rate	9.0	7.5	7.5
Commercial interest rate	12.0	N/A	10.0
Six-month Treasury Bill rate	8.0	5.4	6.0
Inflation rate (Metropolitan Phoenix)	4.0	1.3	3.0
Apartment vacancy rate	11.0	11.0	12.0
Unemployment rate (Metropolitan Phoenix)	6.0	5.4	7.0

	Percent Change		
	1986 Projection	*Actual 1986*	*1987 Projection*
Resale home prices	2.0	2.4	0.0
New home prices	5.0	4.2	3.0
Land prices	8.0	N/A	5.0
Level of firm's activity	10.0	N/A	7.0
Resale home market activity	0.0	14.0	0.0
Monthly rent for apartments	3.0	2.7	3.0

N/A = Not Available

Source: Center for Business Research and Arizona Real Estate Center, College of Business, Arizona State University

All February Purchasing Indicators Up Over January

The economic tempo is stepping up, as all indicators of activity rose in February at a greater rate than in January. New order bookings, production, and employment all enjoyed strong hikes, growing at the highest rates in close to a year. Inventory rebuilding is beginning, and lead times are being extended by stronger overall economic growth. While price increases continued, at a higher rate than in January, they pose no immediate threat to a continuation of the current expansion.

The fifth year of expansion has begun on a very positive note, with broad advances by all economic indicators. The growth pause of the fourth quarter has been replaced by an economy poised for a shift into high gear. The upward tilt of the growth curve undoubtedly reflects a combination of increased export demand, caused by a falling dollar, and inventory rebuilding to meet higher demand. Further inventory building should continue to boost growth during the first half of the year. Barring unexpected external shocks, Arizona's economy probably will expand at a higher rate in 1987 than the mediocre performance of 1986, when growth came close to stalling.

Table 1 presents the results of the February survey of Arizona purchasing managers. Analysis of these results follows.

PRICES

Prices paid for purchased items went up in February at a somewhat higher rate than in January. Prices have been trending up over the past four months, and the February increase was the largest since last June. Inflation is starting to pick up speed, due to the jump in energy prices, but it still is under control relative to 1983 and 1984, the first two years of the expansion.

DELIVERY TIME

Delivery time on shipments from vendors continued to stretch, following January's unusually low lead time increase. Vendor lead times are feeling the pressures of the higher economic growth rate.

INVENTORY LEVELS

Inventory levels of purchased materials grew in February at the highest rate since last October. Business inventories remained lean through 1986. Now, as new orders advance, action is being taken to replenish inventories, a primary reason for the strong production increases. If inventory building continues, which appears likely in support of higher new order and production rates, it will further stimulate economic growth.

NEW ORDERS

New orders received by Arizona firms continue to accelerate, with the largest monthly advance since March 1986. The increases in the incoming order rate have intensified steadily over the past three months as the economy picks up steam.

PRODUCTION

Production registered a good jump, building on the new order gains. February's increase was the greatest since last April, attesting to the strength of the current upswing.

EMPLOYMENT

Employment enjoyed a large increase – four times greater than the January growth rate and the largest since last May. Further employment gains are likely over the next several months as firms take steps to boost their output to meet growing demand.

PURCHASES

Purchases of materials and supplies were up in February and at the highest monthly increase rate since last March. Purchase actions started to intensify in December and have registered a strong increase in each of the past three months.

– Harold Fearon

Dr. Fearon is the National Association of Purchasing Management Professor in the ASU College of Business.

Arizona Purchasing Survey

Now in its 25th year of monthly reporting, Dr. Harold Fearon's survey of Arizona business conditions utilizes data from a questionnaire sent to members of the purchasing management associations of Arizona and southern Arizona. It asks them to indicate the direction of activity - higher, unchanged, or lower - of seven key measures of economic activity in the month just ended. These purchasing managers deal daily with supply, demand, and price factors in the marketplace; their aggregate readings have accurately charted the state's economic course for two decades, providing timely data on turning points.

TABLE 1
FEBRUARY PURCHASING SURVEY

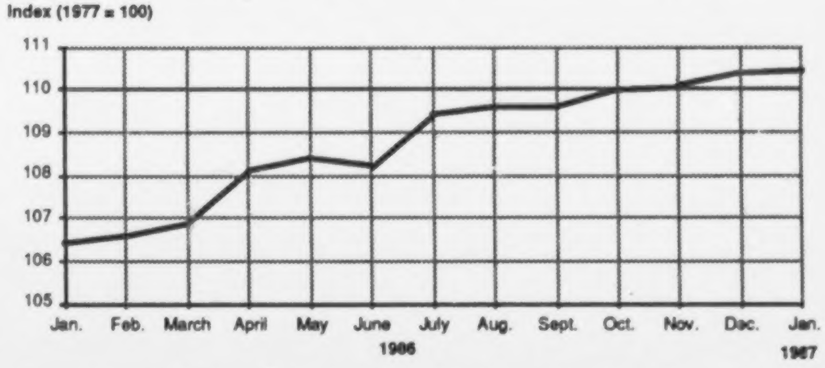
Key Indicators	**Percent of Purchasing Managers Indicating Each Response (February compared to January)** *Higher*	*Same*	*Lower*
Prices paid for major commodities	29	67	4
Delivery time from vendors	24	66	10
Purchased materials inventory level	34	40	26
New orders received	42	39	19
Production	37	52	11
Employment	23	70	7
Purchases	48	35	17

Source: Purchasing Management Association of Arizona and the Purchasing Management Association of Southern Arizona.

Arizona Leading Index Continues Steady Climb in January

With a 0.1 percent gain during January, the Arizona Index of Leading Economic Indicators rose between 0 and 0.3 percent for the sixth consecutive month – the longest period of stability since early 1983. The index set a new record in each of those months, reaching 110.5 in January, up from a revised 110.4 in December (see Figure I).

FIGURE I
ARIZONA INDEX OF LEADING ECONOMIC INDICATORS



Source: Center for Business Research, College of Business, Arizona State University

TABLE 1
NET CONTRIBUTION OF INDIVIDUAL COMPONENTS TO THE ARIZONA INDEX OF LEADING ECONOMIC INDICATORS

	Net Contribution+			
	Oct.	*Nov.*	*Dec.*	*Jan.*
Delivery Time*	.07	.03	-.05	-.08
Inventory Levels*	.06	-.14	.08	.03
New Orders*	-.05	-.17	.11	.09
Production*	.01	.03	-.04	-.01
Employment*	.07	-.01	-.08	.09
Residential Building Permits	-.32	-.17	.16	-.12
Unemployment Insurance Claims	-.05	.13	-.27	.20
Average Workweek, Manufacturing	.07	-.05	-.11	.02
Money Supply	.34	.14	.33^{r}	.03
Change in Sensitive Materials Prices	.16	.29	.12^{r}	-.14
OVERALL INDEX	.35	.10	.24^{r}	.12

^{r}**Revised**

+The net contribution of each component is calculated by multiplying the monthly percent change in its index by its relative importance.

***Based on indicators from the purchasing management associations of Arizona and southern Arizona.**

Source: **Center for Business Research, College of Business, Arizona State University**

During the six months ending in January, the diffusion index – the percentage of advancing components – generally registered between 50 and 60 percent. Six of the 10 components rose during January, none by a sizable amount (see Table 1).

A decline in the number of first-time unemployment insurance claims (a positive indicator) provided the greatest contribution to the index in January, but it did not fully offset a jump in the number of claims filed in December. The national money supply (M2) barely advanced in January, after 11 successive moderate-to-large gains.

The largest negative impacts on the index came from residential building permits and the change in sensitive materials prices; each negated advances posted in December. During the six months through January, the residential building permits component generally fell as the benefit of declining mortgage interest rates wore off. Despite the January decrease, the total six-month change in sensitive materials prices provided more push to the index than any component except M2.

Because of increases in new orders and employment, the net rise during January in the five indicators derived from a survey of Arizona purchasing managers was moderately large. These components have drifted since late 1985, however, with gains in one month negated by subsequent declines.

An early look at the seasonally adjusted February data from the Arizona purchasing managers reveals only a small advance. Gains between December and February still had not offset a large decrease in November. Because these series usually accelerate early in the year, their performance so far during 1987 does not indicate significant strengthening of the Arizona economy beyond the level experienced during most of 1986.

OUTLOOK

After the weakest growth of the four-year-plus expansion during fourth quarter 1986, early data for January suggest that the Arizona economy rebounded. Based on the performance of the leading index during 1986, this improvement should continue through early 1987; then, the economy should hold at a growth rate near that experienced during most of 1986. The chance of a recession beginning before late 1987, when the expansion will be the second-longest on record during peacetime conditions, is just 3 percent.

– Tom R. Rex
Research Manager

ARIZONA ECONOMIC INDICATORS

	Month or Quarter	Value	Percent Change from Previous Period	Percent Change from Year Ago	Year-to-Date Value	Year-to-Date Percent Change from Year Ago
GROSS STATE PRODUCT (In Billions of Dollars, at Annual Rate)						
Arizona - Current Dollars	3rd Qtr.	52.716	2.6	9.1	NA	NA
Arizona - 1982 Dollars	3rd Qtr.	46.176	2.0	7.2	NA	NA
CONSUMER PRICE INDEX (1977 = 100)						
Metropolitan Phoenix	4th Qtr.	193.6	-0.1	1.1	NA	NA
INDEX OF LEADING ECONOMIC INDICATORS (1977 = 100)						
Arizona	Jan.	110.5	0.1	3.9	NA	NA
BUILDING PERMITS (Total Dollar Value in Thousands)						
Maricopa County	Dec.	217,274	-8	-13	3,915,370	-2
Pima County	Dec.	50,622	1	65	791,870	5
Balance of State	Dec.	37,949	-21	-11	675,895	0
Arizona	Dec.	305,845	-9	-5	5,383,135	-1
TOTAL HOUSING UNITS AUTHORIZED						
Maricopa County	Dec.	1,848	-1	-34	44,108	-17
Pima County	Dec.	1,417	107	197	12,702	5
Balance of State	Dec.	731	-19	-30	11,947	-28
Arizona	Dec.	3,996	15	-7	68,757	-16
HOME SALES						
Maricopa County - Number	Jan.	4,740	-27	25	4,740	25
Maricopa County - Median Price	Jan.	78,150	-2.1	7.1	78,150	7.1
HOUSING AFFORDABILITY INDEXES						
Metropolitan Phoenix - New Homes	4th Qtr.	98	3.2	18.1	NA	NA
Metropolitan Phoenix - Resale Homes	4th Qtr.	114	7.5	18.8	NA	NA
MORTGAGE INTEREST RATES (Conventional, 30-year, Fixed-rate)						
Maricopa County	Feb.	8.9	-2.2	-15.2	NA	NA
POPULATION ESTIMATES (In Thousands)						
Maricopa County	4th Qtr.	1,942	1.0	4.5	NA	NA
Arizona	4th Qtr.	3,392	0.9	3.8	NA	NA
ELECTRICAL POWER SALES (In Millions of Kilowatt Hours)						
Arizona	Jan.	3,112	9.3	15.7	3,112	15.7

NA = Not Applicable

Source: Center for Business Research, College of Business, Arizona State University

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'86-'87 Winter Residents Spend $400 Million in Valley

An estimated 200,000 seasonal residents were living in the Phoenix metropolitan area at the height of the 1986-87 winter season in February. During the entire season, they injected approximately $400 million into the local economy. These figures are derived from a 1987 survey by the ASU College of Business and from information on Valley "snowbirds" included in Western Savings' *Forecast 1986.*

Local businesses and public agencies often need information about the Phoenix area's winter resident population for use in planning activities. Unfortunately, no government agency systematically monitors seasonal migration, although they track permanent migration flows.

For the past four years, ASU College of Business researchers have surveyed the Valley's winter residents of mobile home and travel trailer/RV parks (the most popular types of accommodation among area snowbirds). Initially a census of parks in the Mesa/Apache Junction vicinity in 1984, the geographic scope expanded until the census encompassed the entire Phoenix metropolitan area in 1986. This article presents the findings of the 1986-87 research project.

SURVEY METHODOLOGY

To conduct the survey of parks, researchers used a list of Valley mobile home and travel trailer parks that they update annually with information from the Phoenix Metropolitan Housing Study of Mountain West Research and local planning departments. Since the 1986 survey indicated that few seasonal residents choose to live in parks located in south or central Phoenix, information

See "Snowbirds," page 2

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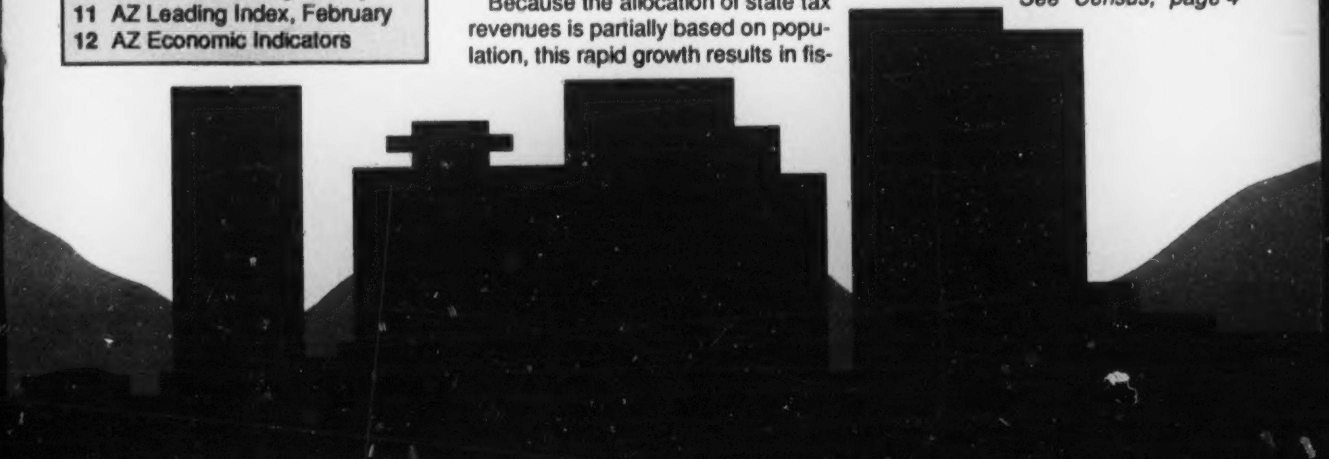
'85 Maricopa County Special Census Report

Population Tops 1.8 Million; Pace Continues

More than 1.8 million people resided in Maricopa County during October 1985, according to the special census, an increase of 330,000 from the 1.5 million population count of 1980. The pace of growth has continued, with the number of county residents topping an estimated 1.9 million at the end of 1986.

Because the allocation of state tax revenues is partially based on population, this rapid growth results in fiscal gain for local governments, the primary reason that the Maricopa Association of Governments contracted for a special census with the U.S. Census Bureau. A welcome byproduct of the special census is updated demographic information about each city and town as well as the unincorporated areas of Maricopa County.

See "Census," page 4



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"Snowbirds," from page 1

for those areas was not updated for the 1986-87 season.

During the second and third weeks of February 1987, the ASU Survey Research Laboratory called the owners or managers of parks in the west, north, and east Valley to ascertain the number of spaces, occupancy levels, and proportion of winter residents in their parks. The surveyors did not contact winter residents staying in motels, hotels, apartments, houses, condominiums, with relatives/friends, or camping on public lands. Thus, the park census provides information on a major segment of all winter residents rather than a count of the entire seasonal population.

SURVEY RESULTS

Parks in the Phoenix metropolitan area, including Apache Junction, had 60,000 mobile home spaces and 38,000 travel trailer/RV spaces – a total of nearly 100,000 spaces. The proportion of occupied spaces in all parks averaged nearly 90 percent; and, based on census responses, an estimated 55 percent of occupied spaces Valleywide were home to seasonal residents. With more than 85,000 occupied spaces, this proportion implies 47,000 winter resident households in mobile home, travel trailer, and RV parks in the Valley. Assuming an average of two people per household, this estimated number of households represents a park population of 94,000 seasonal residents during February 1987.

Table 1 summarizes the results of the 1987 park census. The data presented by geographical area reveal that the Valley's winter resident population is heavily concentrated in the East Valley. Not only are 84 percent of the travel trailer/RV spaces and 53 percent of all mobile home spaces located there, but the proportion of spaces occupied by winter residents is much higher in the East Valley: 72 percent versus 23 percent in the other parts of the Valley. Thus, 85 percent of seasonal resident households staying in Valley parks were living in the East Valley (see Figure 1).

TABLE 1
WINTER RESIDENTS IN METROPOLITAN PHOENIX
MOBILE HOME AND TRAVEL TRAILER/RV PARKS
1987 Census, By Geographic Area

	East	Phoenix	West	Total
Number of Mobile Home Spaces	31,622	17,416	10,625	59,663
Occupancy Rate (percent)	85%	94%	87%	88%
Number of Travel Trailer and RV Spaces	31,661	2,492	3,411	37,564
Occupancy Rate (percent)	90%	93%	74%	89%
Number of Occupied Spaces	55,420	18,678	11,767	85,865
Percent of Spaces Occupied by Winter Residents	72%	24%	22%	55%
Number of Winter Resident Households	39,915	4,457	2,634	47,006

Source: Census conducted by the authors and the ASU Survey Research Laboratory, February 1987.

TABLE 2
WINTER RESIDENT HOUSEHOLDS:
NUMBER AND PERCENTAGE OF EACH TYPE
Metropolitan Phoenix, February 1987

	Number	Percent
Mobile Home/Travel Trailer/RV Park	47,000	47
Apartment	23,000	23
Single Family Home/Condominium	15,000	15
Hotel/Motel	8,000	8
Friends/Relatives	7,000	7
TOTAL	100,000	100

Sources: Forecast 1986, Snowbird Survey, by Western Savings and Datapol, February 1986; and calculations by the authors.

TOTAL WINTER RESIDENT POPULATION

While the ASU park census provides information on only one segment of the Valley's total seasonal population, Western Savings' *Forecast 1986* study collected data relating to the entire winter resident population, regardless of type of accommodation. The information concerning living arrangements indicates that some 47 percent of the winter residents interviewed resided in mobile home, travel trailer, or RV parks in 1986 (Table 2). If this figure is representative of the seasonal population residing in the Valley during February 1987, then these *Forecast 1986* data suggest a total of 100,000 winter resident households or 200,000 people at the peak of the 1986-87 winter season. Since some winter visitors spend only part of the season in the Valley, then move on, to be replaced by other seasonal residents, the overall head count for the entire 1986-87 winter season must be even more than 200,000.

ECONOMIC CONTRIBUTION

Using the 47,000-household estimate of park residents and assuming an average length of stay of four months, with average monthly expenditures per household of $1,000, the seasonal residents staying in Valley mobile home, travel trailer, and RV parks injected $188 million into the local economy. For the Valley's entire winter resident population, the same assumptions and a total seasonal population of 100,000 households lead to an estimate of $400 million in expenditures during the 1986-87 season.

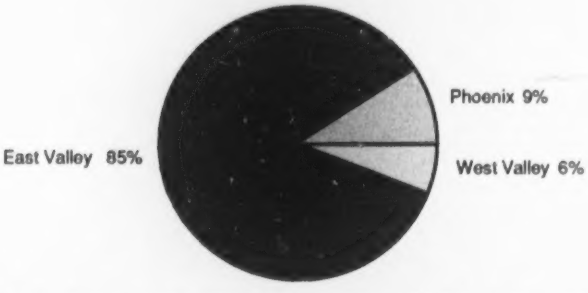
Since the majority of winter residents stay in the East Valley, their economic impact most directly affects the business community in that portion of the Phoenix metropolitan area. The stimulus provided by the spending of seasonal households is particularly important to the economic viability of many east Mesa and Apache Junction businesses. The peak seasonal population of the Apache Junction area, for example, is several times larger than the 14,000 permanent residents enumerated in the 1985 special census.

WINTER VISITORS OR PART-TIME RESIDENTS?

While the Phoenix metropolitan area is generally considered a "home away from home" for the 200,000 winter residents, many of these households actually spend more than half the year in the Valley. The *Forecast 1986* survey reported that one-fifth of all respondents stayed six months or longer in Arizona.

A supplemental question was added to the 1987 park survey to

FIGURE I
GEOGRAPHIC DISTRIBUTION, WINTER RESIDENTS OF MOBILE HOME AND TRAVEL TRAILER/RV PARKS
1987 Census



Source: Census conducted by the authors and the ASU Survey Research Laboratory, February 1987.

TABLE 3
DURATION OF 90 PERCENT OR MORE OCCUPANCY
By Type of Park (Percent), East Valley, 1985-86 Season

Months	Mobile Home Parks	Travel Trailer/ RV Parks	Mixed Parks	All Parks
1	0.0	2.9	0.0	0.7
2	0.0	2.9	2.5	2.0
3	5.4	26.5	7.4	11.2
4	5.4	17.6	7.4	9.2
5	10.8	11.8	13.6	12.5
6	21.6	20.6	35.8	28.9
7+	56.8	17.6	33.3	35.5
TOTAL	100.0	100.0	100.0	100.0
Median	6-7 months	5-6 months	4 months	5-6 months

Source: Census conducted by the authors and the ASU Survey Research Laboratory, February 1987.

ascertain the number of seasonal households staying six months or more in Valley mobile home, travel trailer, and RV parks. Concentrating on the East Valley, these data show that approximately 38 percent of the seasonal households living in mobile home parks and 30 percent of those residing in travel trailer/RV parks stay six months or more. These proportions imply that more than 14,000 East Valley mobile home/travel trailer/RV households spent more than half of the year in Arizona.

Since the first U.S. census in 1790, population counts have been based on the concept of "usual place of residence" – the place a person regards as his or her home. The purpose is to assure that all persons are enumerated only once and in only one location. Unfortunately, this approach does not provide a realistic count of the resident population for areas that are the destination of many part-time residents.

This discrepancy has practical significance in Arizona, where tax revenues are distributed on the basis of permanent population. State law (A.R.S. 42-1341) provides for the distribution of revenues based on population counts from either the last decennial census or a mid-decade (special) federal census, both based on the "usual place of residence" approach.

Given the growing magnitude of seasonal migration, the U.S. Census Bureau has been evaluating possible modifications to the residency rules for future censuses. State and local government agencies that draft relevant regulations should also take into consideration the large number of part-time residents in many Arizona communities.

The seasonal variation in population of the East Valley, where most parks catering to winter residents are located, is shown in Table 3. Of all responding East Valley parks, the typical park was fully occupied (an occupancy level of 90 percent or more) only five months of the year. This seasonality was particularly evident in the travel trailer/RV parks, which were fully occupied for only four months of the 1985-86 season. Slightly more than one-half of East Valley mobile home parks had 90 percent occupancy levels for more than half of the year, but the number of residents varied substantially by season.

STATEWIDE PERSPECTIVE

Estimates of the number and expenditures of winter residents of the Phoenix metropolitan area – 200,000 people spending $400 million – demonstrate the importance to the local economy of the annual influx of snowbirds. However, the Valley of the Sun is not the only area in Arizona that plays host to large numbers of seasonal residents each winter. The communities along the Colorado River attract an increasing number of snowbirds, with the Yuma area serving as winter home to 40,000 seasonal residents, according to the Yuma Chamber of Commerce. The Tucson area and smaller communities in Southern Arizona, such as Green Valley and Casa Grande, are also popular destinations.

For the first time in 1987, ASU researchers expanded the winter resident survey project to include the mobile home, travel trailer, and RV parks in Pima and Pinal counties. The results of these surveys will be reported in an upcoming issue of *Arizona Business.*

– Stephen K. Happel
– Timothy D. Hogan

Dr. Happel is Associate Professor of Economics and Dr. Hogan is Professor of Economics and Acting Director of the Center for Business Research in the ASU College of Business.

The authors gratefully acknowledge: funding from the Arizona Department of Commerce, Arizona Public Service Company, Mountain Bell, Salt River Project, and Western Savings; the efforts of the Arizona State University Survey Research Laboratory; the cooperation of the park owners/managers who responded to the survey; and the research assistance of Elmer Pflanz and Pat Morgan.

This article reports on part of ASU's ongoing seasonal migration research. For more information, contact either Dr. Happel at 965-5001 or Dr. Hogan at 965-3961.

"Census," from page 1

GEOGRAPHIC DISTRIBUTION

Since cities and towns within the county were the primary "customers" for the census information, data collection efforts were organized toward providing population statistics on each municipality. Table 1 presents the population counts for each city and town in Maricopa County, as well as for several recognized unincorporated communities and the remaining unincorporated areas in the north, northwest, west, and southeast regions of the county. For comparison, Table 1 includes 1980 population counts and measures of growth for the 1980-85 period.

Of the individual cities, Phoenix gained the most residents during the 1980-85 period, 92,000, a 12 percent increase. Mesa's growth was nearly as great, 87,000, a 57 percent jump. One-half of the county's total population rise during the first half of the 1980s, an increase of 162,000 people, occurred in the southeast Valley. More than 500,000 people resided there in 1985.

While the absolute numbers of new residents were not as large, the growth rates experienced by several smaller communities far outpaced those of their bigger neighbors. The populations of Peoria, Chandler, and Gilbert more than doubled during the 1980-85 period, as did those of unincorporated Sun City West, Sun Lakes, and Fountain Hills.

Many residents of Maricopa County have chosen to live outside city or town limits. The 1985 special census figures show that 128,000 people, 7 percent of the county's population, live outside the boundaries of recognized communities.

RACIAL/ETHNIC COMPOSITION

The 1985 special census revealed no substantial changes in the overall racial/ethnic mix of Maricopa County. The proportions of Blacks (3.2 percent), Native Americans (1.4 percent), and Hispanics (13.2 percent) changed very little during the early 1980s. Only a relatively large increase in the number of Asian/Pacific Islander residents (growing from 13,000 in 1980 to 24,000 in 1985) caused the proportion of minorities to rise slightly between 1980 and 1985.

The racial/ethnic populations are not distributed evenly throughout the Phoenix metropolitan area. Nearly three-quarters of the Black population, more than one-half of the Hispanics, and almost one-half of both the Asian and Indian populations live within the city of Phoenix. Many Asians/Pacific Islanders also reside in the southeast Valley, while most of the American Indian population living outside the city of Phoenix reside in Guadalupe, the unincorporated northern areas (where both the Fort McDowell and Salt River Indian Reservations are located) or the southeast portions of the county (the Gila River Indian Reservation). The Hispanic population living outside Phoenix is concentrated in the western part of Maricopa County.

AGE DISTRIBUTION

Over the 1980-85 period, the age composition of the county population changed considerably. While the proportion of young children (under 5) remained slightly less than 8 percent, the declines in U.S. fertility during the 1970s caused a drop in the proportion of children (people under 18) in the overall population from 28 to 26 percent during the 1980-85 period. At the other end of the age scale, the number of county residents 65 and older grew faster than the overall population, leading to a gain in the proportion of elderly from 10 to 12 percent of all county residents in 1985.

Much of the increase in the 65 and older population resulted from retirement migration to the Phoenix metropolitan area, and many of these

Geographic Boundaries

The 1985 special census counts were tabulated to provide information for each municipal unit in Maricopa County on the basis of their 1985 boundaries. In some cases, these boundaries were different than in 1980. For this article, data for the unincorporated portion of Maricopa County have been tabulated to provide population statistics for five recognized communities (Fountain Hills, Litchfield Park, Sun City, Sun City West, and Sun Lakes).

The remaining unincorporated areas were grouped into four geographic regions: *North* – the unincorporated areas of northern Maricopa County east of the Agua Fria River to the eastern county line but not including the census tract containing Fountain Hills; *Northwest* – west of the Agua Fria river and north of Bell Road but not including the Sun City or Sun City West census tracts; *West* – south of Bell Road and west of the Peoria, Glendale, and Phoenix city limits but not including the Sun City census tracts; *Southeast* – the southeast corner of the county, including the area south of South Mountain but not the Sun Lakes census tract.

Special Census Data Available on Diskettes

For this article, data from the 1985 Maricopa County special census were transferred to microcomputer diskettes for processing with LOTUS 1-2-3. Four files were created:

- Population counts by race/ethnic group plus housing counts for each census tract;
- Population counts by race/ethnic group plus housing counts by city, including all tracts within municipal limits;
- Population counts by age group for each census tract;
- Population counts by age group and city, including all tracts within municipal units.

Copies of these LOTUS files may be ordered for $10 per diskette [files 1 and 2 fit on a single diskette; files 3 and 4 each occupy a separate diskette] by writing to the Center for Business Research, College of Business, Arizona State University, Tempe, AZ 85287. Please include your return mailing address and a check for the appropriate amount, payable to the Center for Business Research.

migrants settled in the retirement communities surrounding Phoenix. The elderly populations of Sun City and Mesa both exceed 30,000, and the smaller retirement communities of Sun City West and Sun Lakes also have grown rapidly. Substantial numbers of the 65 and older population also reside in outlying areas – Carefree, Wickenburg, and the southeastern portion of the county.

Since many younger households have chosen to locate in the western and southeastern suburbs of the metropolitan area, these communities have a much different age distribution than the county average, with fewer elderly and more children. This pattern is particularly evident in the west Valley – Avondale, Glendale, Peoria, and the surrounding unincorporated areas – but it also characterizes the fast-growing communities of Chandler and Gilbert in the southeast Valley.

SUPPLEMENTAL DATA

Although the mid-decade special census provides updated information, which is valuable in a rapidly growing area like metropolitan Phoenix, the types of data collected were limited. For example, the census includes none of the detailed socioeconomic, demographic, and housing information needed by businesses, government agencies, and researchers. Those interested in such data must rely on the information available from the 1980 census or from more recent local surveys, such as *Inside Phoenix* or *Forecast 1987.*

Arizona officials and the U.S. Census Bureau already are preparing for the 1990 census. The Census Bureau has begun field tests to decide what questions to ask and how to ask them. The Arizona Department of Economic Security and the Census Bureau's regional staff are developing the necessary geographic information. One valuable outcome of these planning activities will be the availability from the 1990 census of more detailed subcounty data for Arizona's non-metropolitan counties.

– Timothy D. Hogan

Dr. Hogan is Professor of Economics and Acting Director of the Center for Business Research in the ASU College of Business.

TABLE 1
MARICOPA COUNTY SPECIAL CENSUS INFORMATION
October 1985 Counts and 1980-85 Percent Changes

	1985 Population	Number Change *1980-85*	Percent Change *1980-85*	Percentage of 1985 Population				% of 1985 Pop. Under 18	% of 1985 Pop. 65+
				Black	*Asian/ Pac. Isl.*	*Indian/ Nat. Am.*	*Spanish Origin*		
Avondale	9,704	1,536	18.8	4.9	0.8	0.6	46.1	36.1	6.7
Buckeye	3,779	345	10.0	5.0	1.5	1.3	21.9	34.0	9.2
Carefree	1,518	*	*	0.1	0.1	0.2	1.4	9.5	31.4
Chandler	63,817	34,144	115.1	2.2	1.8	1.0	16.0	32.4	4.4
El Mirage	3,908	-399	-9.3	2.5	0.1	0.1	80.2	41.5	5.2
Gila Bend	1,999	414	26.1	4.0	1.4	3.9	40.9	33.0	6.3
Gilbert	12,102	6,385	111.7	1.2	0.6	0.3	12.2	36.4	3.5
Glendale	122,392	25,220	26.0	2.0	1.8	0.6	12.7	30.0	7.4
Goodyear	4,598	1,851	67.4	7.7	1.2	2.0	19.1	21.6	5.4
Guadalupe	4,609	103	2.3	0.3	0.0	46.1	95.4	44.9	4.5
Mesa	239,587	87,134	57.2	1.5	1.1	0.7	8.6	28.1	12.7
Paradise Valley	11,510	425	3.8	0.1	1.2	0.1	2.1	26.2	10.9
Peoria	27,598	15,291	124.2	1.7	1.0	0.8	18.0	29.3	14.3
Phoenix	881,640	91,936	11.6	4.9	1.3	1.3	15.6	26.8	9.2
Scottsdale	108,447	19,825	22.4	0.5	0.9	0.4	3.4	18.5	14.3
Surprise	4,020	297	8.0	2.3	0.1	0.2	71.4	40.6	5.3
Tempe	132,942	26,022	24.3	2.6	3.0	0.8	8.2	22.0	5.7
Tolleson	4,438	5	0.1	0.7	0.9	0.7	71.0	36.8	7.3
Wickenburg	3,925	390	11.0	0.0	0.2	0.5	5.6	19.3	31.4
Youngtown	2,287	33	1.5	0.1	0.2	0.0	2.4	4.6	60.0
Non-incorporated	193,136	*	*	1.0	0.5	3.7	8.4	19.6	32.8
Fountain Hills	5,797	3,026	109.2	0.2	0.4	0.2	1.5	21.1	13.3
Litchfield Park	3,747	90	2.5	0.6	2.8	0.3	4.3	26.3	11.7
Sun City	39,871	-634	-1.6	0.2	0.1	0.0	0.4	0.1	82.8
Sun City West	10,450	6,678	177.0	0.3	0.1	0.0	0.3	0.0	80.8
Sun Lakes	5,030	3,105	161.3	0.3	0.1	0.0	1.1	0.3	44.2
North	27,199	**	**	0.7	0.3	13.9	4.8	28.7	10.1
Northwest	5,537	**	**	0.5	0.4	0.9	14.6	28.0	15.6
West	39,893	**	**	3.6	1.0	1.9	22.9	32.9	5.3
Southeast	55,612	**	**	0.4	0.4	4.4	8.2	23.7	26.0
COUNTY TOTALS	1,837,958	328,694	21.8	3.2	1.3	1.4	13.2	28.0	12.0

*Not possible to calculate due to incorporation of Carefree subsequent to 1980.
**Not possible to calculate due to annexations subsequent to 1980.

Source: Compiled by the Center for Business Research, College of Business, Arizona State University from a U.S. Census Bureau computer tape file.

Valley Inflation Makes Dramatic Re-entrance

Spurred by exploding gasoline prices, seasonally adjusted inflation in the Phoenix metropolitan area soared 2.1 percent during first quarter 1987 – an increase equivalent to that of the six prior quarters combined. Before seasonal adjustment, inflation measured 2.3 percent, the largest quarterly gain since 1981. The Metropolitan Phoenix Consumer Price Index jumped to 198.0 (1977 = 100), 3.3 percent higher than the index for first quarter 1986.

Gasoline prices, which surged 25 percent during the first quarter, were solely responsible for the sharp acceleration in the inflation rate. Excluding gasoline, the CPI advance was identical to that of fourth quarter 1986 and less than in the second and third quarters of 1986.

UNDERLYING INFLATION RATE

Oscillations in gasoline prices have disguised the true rate of inflation. Instead of a sharp swing from 6 percent in early 1985 to 1 percent in 1986, back up to more than 3 percent in first quarter 1987, the underlying annual inflation rate (all items minus gasoline) has fluctuated less severely (see Figure I).

The underlying rate in 1984 and early 1985 was higher than the equivalent rate for the nation because of a series of local price shocks, mostly from health insurance and used car increases. However, the local rate fell to the prevailing national rate of 3 to 4 percent when these shocks ceased. (In addition, housing inflation slowed, due to stabilization of apartment rents and utility costs).

Though the underlying rate rose slightly during first quarter 1987, it likely will remain near 4 percent throughout 1987. In contrast, the overall inflation rate could accelerate to near 6 percent by year-end 1987, strictly because of higher gasoline prices. (This forecast assumes only modest further increases in gas prices over those prevailing on April 1).

COMPONENT INDEXES

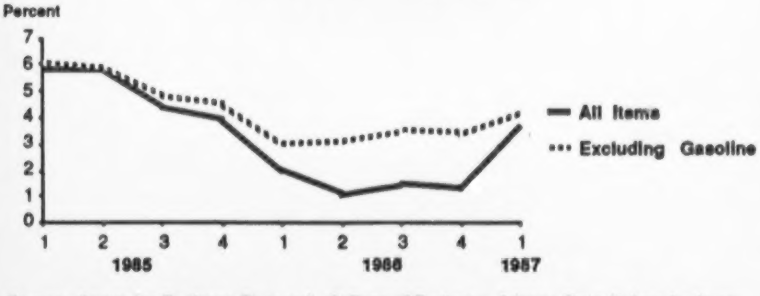
Other than transportation, none of the major categories experienced a first quarter 1987 change much different from the rates measured in the six prior quarters.

Food and Beverages

For the second consecutive quarter, prices of food and beverages barely changed (see Table 1). Food away from home, a subcategory that rarely declines, did so for the second straight time. Food at home prices also fell (see Table 2).

Grocery prices dropped mainly because of a large 2.7 percent decrease in the prices of meats, poultry, fish and eggs. Prices of beef, pork, poultry and eggs all declined. Other food at home, another subcategory, also went down.

FIGURE I
METROPOLITAN PHOENIX CPI
Seasonally Adjusted Percent Change
From Same Quarter, Prior Year



Source: Center for Business Research, College of Business, Arizona State University, in cosponsorship with Valley National Bank.

Housing

Housing costs again rose modestly. Though homeowners' costs increased 1.3 percent, renters' costs declined 1.1 percent. Apartment rents, held in check by double-digit vacancy rates, dropped for the third time in the last four quarters.

Fuel and utility costs were slightly lower. Compared to first quarter 1986, less than 1 percent inflation was measured.

Transportation

Gasoline price hikes caused most of the huge 8.1 percent surge in the transportation category. Other subcategories contributed, however. Public transportation costs jumped 6.1 percent (but were only 2.1 percent higher than they were one year earlier). Used car price inflation continued to accelerate, with prices rising 2.8 percent during the first quarter.

In contrast, some subcategories declined, including vehicle parts and equipment, vehicle rental and vehicle finance charges. The latter dropped for the ninth time in the last 10 quarters.

Medical Care

Health care inflation remained comparatively moderate for the seventh consecutive quarter, with a 1.8 percent gain placing the index 5 percent higher than it was one year earlier. Increases in health insurance premiums were not as large as usual during the first quarter. Little change was measured in prescription drug prices and hospital charges.

Other Categories

Apparel and upkeep costs continue to swing from quarter to quarter, with the first quarter decrease more than negating the previous quarter's advance. Entertainment costs again rose rapidly, pushed by large increases in admission fees, member-ship dues and fees for participant sports.

COMPARISON AREAS

Comparisons shown in Table 3 are somewhat misleading because the quarter measured for the United States is the December through February period. Further increases in gasoline prices in March should push the national inflation rate higher. Still, the price hike in the Phoenix area will remain greater than the national average. Just as local gasoline prices were slow to descend during early 1986, before eventually dropping as much as in most areas, they were quick to climb in early 1987. Otherwise, local inflation during the first quarter was comparable to the national average, with a smaller gain in the food and beverages category offsetting larger advances in the less important categories of medical care, entertainment and other goods and services.

Comparisons to one year ago no longer will be available for Denver and San Diego. As part of the new methodology implemented in January, the U.S. Department of Labor is producing an index only twice per year, instead of six times, for many metropolitan areas. Compared to the entire nation, the Phoenix area's annual inflation was lower except in the transportation and entertainment categories.

OUTLOOK

An unexpectedly sharp increase in gasoline prices forces an upward revision in the 1987 inflation forecast. The CPI almost certainly will measure another sizable boost in gasoline prices during the second quarter. Even if those prices then firm, the all-items inflation rate probably will exceed 5 percent by the end of the year. The annual average increase then would be near 4.5 percent instead of the 3.5 percent rate previously forecast. However, because the underlying rate will not have accelerated as much, Phoenix area inflation could stabilize near 5 percent in 1988.

– Tom R. Rex
Research Manager

TABLE 1
PERCENT CHANGES IN
METROPOLITAN PHOENIX CONSUMER PRICE INDEX

		Seasonally Adjusted from Preceding Quarter				
Expenditure Category	*Relative Importance*	*1st 1986*	*2nd 1986*	*3rd 1986*	*4th 1986*	*1st 1987*
ALL ITEMS	100.0	-0.2	0.4	0.8	0.5	2.1
Food and Beverages	18.7	0.5	1.0	2.3	0.1	-0.2
Housing	39.5	0.7	0.2	1.0	0.4	0.5
Apparel and Upkeep	4.8	-3.3	5.6	-2.5	1.9	-2.5
Transportation	21.2	-2.5	-1.9	-1.1	-0.2	8.1
Medical Care	6.9	1.3	1.7	0.2	1.2	1.8
Entertainment	4.6	-1.7	2.4	-0.8	4.5	2.4
Other Goods and Services	4.3	1.7	0.7	2.1	0.8	2.0

TABLE 2
METROPOLITAN PHOENIX CONSUMER PRICE INDEX
First Quarter 1987

	Index (1977 = 100)		Percent Change from	
Expenditure Category	*Last Quarter*	*This Quarter*	*Last Quarter **	*Year-Ago Quarter*
ALL ITEMS	193.6	198.0	2.1	3.3
Food and Beverages	180.2	181.4	-0.2	2.8
Food	180.5	181.5	-0.4	2.6
Food at Home	178.2	179.7	-0.3	2.9
Cereal and Bakery Products	197.5	203.3	1.4	4.5
Meats, Poultry, Fish, and Eggs	166.9	164.9	-2.7	3.7
Dairy Products	165.7	168.7	1.5	3.6
Fruits and Vegetables	184.1	186.3	1.1	-0.3
Other Food at Home	170.7	173.0	-0.5	2.5
Food Away from Home	182.1	182.0	-0.4	2.2
Housing	203.6	204.3	0.5	2.0
Shelter	222.1	223.1	0.4	2.7
Renters' Costs**	119.3	118.0	-1.1	1.2
Homeowners' Costs**	112.1	113.6	1.3	3.7
Fuel and Other Utilities	168.5	165.6	-0.6	0.9
Gas (piped) and Electricity	181.2	176.2	-0.6	1.2
Household Furnishings/Operations	152.3	155.0	1.9	0.3
Apparel and Upkeep	149.8	146.5	-2.5	1.7
Transportation	175.0	189.0	8.1	4.5
Private Transportation	171.7	186.3	8.3	4.7
New and Used Cars	194.8	200.0	1.7	5.3
Motor Fuels	128.8	158.0	24.9	-9.0
Public Transportation	226.4	232.6	6.1	2.1
Medical Care	272.2	280.1	1.8	5.0
Entertainment	206.1	212.1	2.4	7.6
Other Goods and Services	182.2	185.9	2.0	5.7

*Seasonally adjusted **Base period is second quarter 1983.

TABLE 3
METROPOLITAN PHOENIX AND UNITED STATES
CONSUMER PRICE INDEXES
First Quarter 1987

	Percent Change from Last Quarter*		Percent Change from One Year Ago	
Expenditure Category	*Phoenix*	*United States*	*Phoenix*	*United States*
ALL ITEMS	2.3	1.1	3.3	2.1
Food and Beverages	0.7	1.6	2.8	4.5
Housing	0.3	0.1	2.0	2.4
Apparel and Upkeep	-2.2	-2.2	0.2	2.1
Transportation	8.0	1.9	4.5	-2.9
Medical Care	2.9	1.8	5.0	7.1
Entertainment	2.9	0.5	7.6	2.5
Other Goods and Services	2.0	1.4	5.7	5.7

*Not seasonally adjusted

Source (Tables 1, 2 and 3): Metropolitan Phoenix data compiled by the Center for Business Research, College of Business, Arizona State University, in cosponsorship with Valley National Bank; other data in Table 3 are from the U.S. Department of Labor, Bureau of Labor Statistics.

1986 Home Prices Vary Valleywide

The 1986 mean home sales price in many areas of metropolitan Phoenix was significantly different from the average for the Valley as a whole. Measuring price on a per-square-foot basis reduced the number of significant deviations from the metro average, but many still remained.

These deviations occur, in part, because home prices, even on a per-square-foot basis, are related to the age and size of the home (see Table 1). Further, home age and size correlate with the neighborhood in which the home is located. However, even after adjusting for home age and size, the mean price per square foot differed geographically.

A number of factors could account for these variations, such as quality of construction, presence of amenities, lot size and neighborhood condition. Lot size has a particular impact on price per square foot of large homes, which frequently are built on big lots.

GEOGRAPHIC VARIATION

In seven districts, the 1986 mean price per square foot was significantly higher than the metro average (see Table 2). However, in Chandler/Gilbert and Mid-town Phoenix, the difference was less than $5 per square foot and was not consistent across all housing ages and sizes. Further, in Mid-town Phoenix, some of the homes were purchased for the commercially zoned land they occupied.

In the five remaining areas, houses of nearly all sizes and ages were more expensive. The areas stretch contiguously from North Central Phoenix through the East Camelback area and Paradise Valley to North Scottsdale. Housing in Sun City West also was universally more expensive.

In nine districts, the mean price per square foot was significantly lower than the metro average, but in Northwest Phoenix, South Phoenix and Sun City/Youngtown/Peoria, the difference was less than $5 per square foot, with the lower prices applying only to certain housing types.

The remaining districts with lower prices all are located in the West Valley. Houses of virtually all sizes and ages were less expensive in West Central Phoenix, Maryvale and the Christown area. Prices were not as low, nor did the lower prices prevail among all types of housing, in the Metrocenter area, Glendale and the Western suburbs.

Prices in the East Valley – Mesa, Tempe, South Scottsdale – and extending into East Central Phoenix were near the metro average. The northern districts of Deer Valley and North Sunnyslope/Moon Valley also had prices near average.

– Tom R. Rex
Research Manager

TABLE 1
1986 MEAN SALES PRICE
PER SQUARE FOOT
Resale Single Family Homes
Metropolitan Phoenix

Total Sample	$55
By Year Built:	
1970 or earlier	52
1971-75	52
1976-80	56
1981-85	62
By Size (Square Feet):	
Less than 1,200	57
1,200-1,599	53
1,600-1,999	52
2,000-2,399	56
2,400 or more	74

Source: Center for Business Research, College of Business, Arizona State University; from data supplied by Marketron Services, Inc., Phoenix.

Methodology

This report is based on recorded sales of existing single family homes during 1986, excluding transactions with incomplete or questionable data. Instead of the median sales values normally reported, mean sales values were required for certain statistical tests. The t-test was used to determine the significance of the difference of subgroup means from the overall mean for the Phoenix metropolitan area.

For home sales, the mean sales price generally is greater than the median value because of a relatively few very expensive homes. The mean price per square foot of most subgroups was $2 to $3 greater than the median value.

TABLE 2
1986 MEAN SALES PRICE
Resale Single Family Homes Only
By Geographic District

District	Price (In thousands)	Price Per Square Foot
North Scottsdale	$173[H]	$73[H]
South Scottsdale	88	55
Paradise Valley	178[H]	72[H]
North Sunnyslope/Moon Valley	88	56
Northwest Phoenix	82[L]	51[L]
Metrocenter	70[L]	49[L]
Sun City/Youngtown/Peoria	72[L]	52[L]
Glendale	75[L]	50[L]
Christown	61[L]	45[L]
North Central Phoenix	110[H]	61[H]
East Camelback	84	60[H]
East Central Phoenix	67[L]	57
Mid-town Phoenix	76[L]	58[H]
West Central Phoenix	47[L]	43[L]
Maryvale	56[L]	45[L]
Downtown/South Central Phoenix	56[L]	52
South Phoenix	73[L]	53[L]
North Tempe	77[L]	54
South Tempe	95[H]	58
North Mesa	91	56
South Mesa	84[L]	55
East Mesa	77[L]	54
Chandler/Gilbert	88	59[H]
Western suburbs	71[L]	50[L]
Deer Valley	81[L]	56
Sun City West/Rural Maricopa County	100[H]	61[H]
TOTAL, METROPOLITAN PHOENIX	89	55

[H] Significantly higher than the mean for all of metropolitan Phoenix.
[L] Significantly lower than the mean for all of metropolitan Phoenix.

Source: Center for Business Research, College of Business, Arizona State University; from data supplied by Marketron Services, Inc., Phoenix. District designations are copyrighted by the Maricopa County Housing Study Committee.

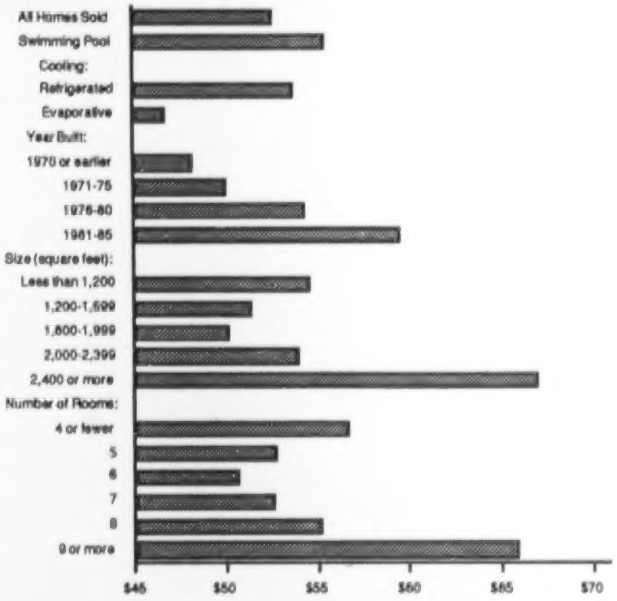
Characteristics Affect Valley Home Values

Certain housing characteristics have a direct impact on the price of a Valley home, even on a per-square-foot basis. Two relationships seem to underlie all others. First, the largest homes – measured by both square feet and number of rooms – have the highest price per square foot, though the smallest homes also are priced above the median (see Figure I). Second, the newer the home, the greater the price per square foot. This relationship holds even though homes built during the 1980s are not larger on average than those constructed during the 1970s.

While some amenities have a relationship with price per square foot, the presence of these amenities is more common in newer and larger homes. Thus, though homes with a swimming pool, for example, sold for a higher price per square foot than homes without a pool, the addition of a pool to an existing home may not impact the home price by any particular amount.

– **Tom R. Rex**
Research Manager

FIGURE I
MEDIAN SALES PRICE PER SQUARE FOOT, BY CHARACTERISTIC
Resale Single Family Homes, Metropolitan Phoenix, 1986



Source: Center for Business Research, College of Business, Arizona State University

Volume of Real Estate Transactions Rises in Maricopa County

Maricopa County's recorded transactions in most real estate classifications increased during 1986. Generally, the median sales price also rose from the 1985 level (see Table 1). After adjusting for building size, however, price gains – on a per-square-foot basis – usually were not as large.

For example, though the median sales price of apartment complexes was 19 percent higher in 1986 than in 1985, the median price per square foot was only 3 percent greater. Likewise, while the median price of stores jumped 11 percent in 1986, the median square-foot price fell 8 percent from 1985.

Land prices rose 24 percent during 1986, but acreage figures were not available. Some of the increase may have resulted from the sale of larger lots.

– **Tom R. Rex**
Research Manager

TABLE 1
REAL ESTATE TRANSACTIONS
Selected Categories, Maricopa County

	Number of Sales		Median Sales Price	
Classification	*1986*	*Percent Change from 1985*	*1986*	*Percent Change from 1985*
00 – Vacant Land	6,754	14	57,500	24
03 – Multiple Residential	1,105	36	106,500	19
08 – Mobile Homes	1,193	33	38,000	4
11 – Store Buildings	212	3	200,000	11
15 – Office Buildings	120	20	335,000	-14
37 – Warehousing	173	62	400,000	7

Source: Center for Business Research, College of Business, Arizona State University; from data supplied by Marketron Services, Inc., Phoenix.

Source of Data

In addition to recorded sales of single family homes, townhouses and condominiums, the Center for Business Research and Arizona Real Estate Center utilize information on recordings of other types of real estate transactions from Marketron Services, Inc. Each transaction is designated as one of nearly 100 categories, using the Arizona Standard Property Use Classification.

The data are of limited use because many commercial real estate transactions are not legally recorded. Those that are recorded may not be representative of the entire metropolitan Phoenix market.

March Purchasing Indicators Reflect Economic Strength

The Arizona economy recorded an upbeat performance in all areas in March, ending the first quarter on a note of real strength as the expansion enters its fifth year. New orders and production both recorded their highest increase in close to three years. Inventory rebuilding continues, stepping up to its highest rate in well over three years. Employment also registered a healthy gain.

As the economy closes out the first quarter, it has overcome the growth pause evident during the latter half of 1986 and appears ready to upshift smoothly into high gear. The advances in new orders are driving up production rates, necessitating higher inventory levels, which will further intensify the upward spiral. Lead times and employment probably will grow further in the months immediately ahead. Additional price increases are on the horizon, although the likelihood of a return to anything close to double-digit inflation over the balance of the year is remote.

Table 1 presents the results of the March survey of Arizona purchasing managers. Analysis of these results follows.

PRICES

Prices paid for purchased items increased in March at the same rate as in February. The inflation rate began stepping up late in 1986, and the hikes in February and March were the highest since last June. This performance is consistent with that shown by the national raw material price index and signals a return of inflationary pressures in 1987. However, the failure of energy prices to regain their previous high levels likely will curtail inflation below the danger levels experienced during the first two years of the current expansion (1983 and 1984).

DELIVERY TIME

Delivery time on shipments from vendors stretched in March at the same rate as in the previous month. The lengthening of lead times in both February and March is a signal that the economy is tightening up as growing demand begins to remove the slack from vendor operating rates.

INVENTORY LEVELS

Inventory levels of purchased materials jumped up smartly in March, registering the highest one-month increase rate in close to four years (since July 1983). They had been essentially static throughout 1986. Inventory restocking began in January and has been building at a heightened pace in each of the past three months. As new orders and production continue to grow healthier, Arizona firms will find it necessary to build stocks further, fueling growth even more.

NEW ORDERS

New orders received by Arizona firms were up sharply in March, with the largest monthly gain since May 1984. From an almost zero increase rate last November, when the economy looked like it might slide into a recession, new order bookings have shown a strong upward tilt in each of the past four months.

PRODUCTION

Production jumped in March, mirroring the incoming order strength. With the new order rate increasing and the need to rebuild inventory, further production hikes are anticipated over the next few months.

EMPLOYMENT

Employment grew at the same rate as in the previous month. Both the February and March additions to employment were the highest since May 1986. Employment actually experienced slight declines toward the end of 1986, but it now has turned and is moving in a strong upward direction.

PURCHASES

Purchases of materials and supplies advanced in March at the highest rate since May 1984. Purchase actions began to increase in December, and the rate has intensified in each of the past four months, as the economy continues to gain strength.

– Harold Fearon

Dr. Fearon is the National Association of Purchasing Management Professor in the ASU College of Business.

Arizona Purchasing Survey

Now in its 25th year of monthly reporting, Dr. Harold Fearon's survey of Arizona business conditions utilizes data from a questionnaire sent to members of the purchasing management associations of Arizona and southern Arizona. It asks them to indicate the direction of activity - higher, unchanged, or lower - of seven key measures of economic activity in the month just ended. These purchasing managers deal daily with supply, demand, and price factors in the marketplace; their aggregate readings have accurately charted the state's economic course for two decades, providing timely data on turning points.

TABLE 1
MARCH PURCHASING SURVEY

	Percent of Purchasing Managers Indicating Each Response (March compared to February)		
Key Indicators	*Higher*	*Same*	*Lower*
Prices paid for major commodities	29	66	5
Delivery time from vendors	24	67	9
Purchased materials inventory level	40	44	16
New orders received	47	37	16
Production	43	47	10
Employment	27	62	11
Purchases	54	31	15

Source: Purchasing Management Association of Arizona and the Purchasing Management Association of Southern Arizona.

Arizona Leading Index Slips in February

A string of small monthly gains was broken at six by February's 0.2 percent decline in the Arizona Index of Leading Economic Indicators. The index dipped to 110.3 from 110.5 in January (see Figure I).

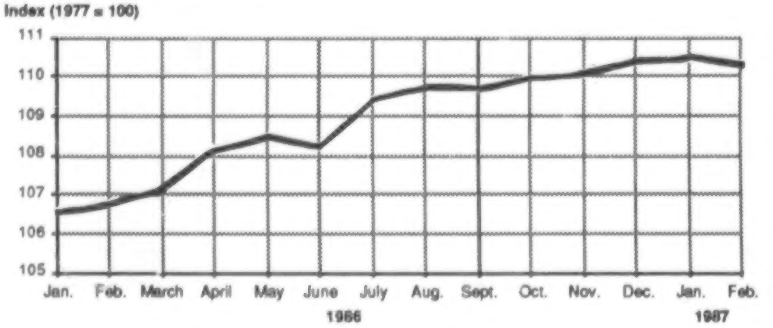
The diffusion index – the percentage of rising components – measured 45 in February, near the proportions recorded during the preceding six months. However, of the three components that changed more than a small amount, two fell (see Table 1), causing the index to change its course.

Both large declines came from the national indicators – money supply (M2) and sensitive materials prices – which generally had been boosting the index in recent months. The decrease in M2 was the largest since mid-1982, but the first since January 1986. Despite this drop, the money supply remained more than 14 percent higher than it was 12 months earlier. Sensitive materials prices fell for the second straight month, following three large gains.

Residential building permits contributed the most to the February index, but this advance only offset January's decline. Though fluctuating from month to month, home building has remained near the level to which it accelerated last spring.

The other components continued to fluctuate in the narrow range they have occupied for more than one year. During the last 12 months, the largest changes occurred in new orders (down 2.5 percent) and inventory levels (down 1.0 percent).

FIGURE I
ARIZONA INDEX OF LEADING ECONOMIC INDICATORS



Source: Center for Business Research, College of Business, Arizona State University

TABLE 1
NET CONTRIBUTION OF INDIVIDUAL COMPONENTS TO THE ARIZONA INDEX OF LEADING ECONOMIC INDICATORS

	Net Contribution†			
	Nov.	*Dec.*	*Jan.*	*Feb.*
Delivery Time*	-.04^r	-.06^r	-.10^r	.08
Inventory Levels*	-.14	.08	.03	-.01
New Orders*	-.17	.11	.09	-.03
Production*	.04^r	-.04	-.01	.00
Employment*	-.01	-.09^r	.10^r	.05
Residential Building Permits	-.17	.17^r	-.19^r	.25
Unemployment Insurance Claims	.13	-.27	.20	.01
Average Workweek, Manufacturing	-.05	-.12^r	.09^r	-.09
Money Supply	.14	.32^r	.06^r	-.21
Change in Sensitive Materials Prices	.28^r	.14^r	-.16^r	-.19
OVERALL INDEX	.06^r	.24	.12	-.16

^{r}Revised

†The net contribution of each component is calculated by multiplying the monthly percent change in its index by its relative importance.

*Based on indicators from the purchasing management associations of Arizona and southern Arizona.

Source: Center for Business Research, College of Business, Arizona State University

REVISIONS

Historical data revisions to the two national series, as well as implementation of new standardization factors for all series, led the Center for Business Research to revise the entire history of the Arizona leading index. However, the changes were small in nature and largely offsetting, so the impact on the overall index was insignificant. For example, despite revisions, the indexes for December and January were unchanged.

OUTLOOK

Little significance should be attached to February's decline in the leading index. The diffusion index remained in the indecisive range of 40 to 60 percent. Thus, although the index is not signaling rapid economic growth, the expansion should continue unimpeded through 1987. The chance of a recession beginning before the end of the year is less than 7 percent.

The current expansion then would exceed the peacetime record length of 58 months, set in the late 1970s. Total growth through year-end 1987, however, probably will not break any records.

– Tom R. Rex
Research Manager

MAY

1987

ARIZONA ECONOMIC INDICATORS

	Month or Quarter	*Value*	*Percent Change from Previous Period*	*Percent Change from Year Ago*	**Year-to-Date** *Value*	**Year-to-Date** *Percent Change from Year Ago*
GROSS STATE PRODUCT (In Billions of Dollars, at Annual Rate)						
Arizona - Current Dollars	3rd Qtr.	52.716	2.6	9.1	NA	NA
Arizona - 1982 Dollars	3rd Qtr.	46.176	2.0	7.2	NA	NA
CONSUMER PRICE INDEX (1977 = 100)						
Metropolitan Phoenix	1st Qtr.	198.0	2.3	3.3	NA	NA
INDEX OF LEADING ECONOMIC INDICATORS (1977 = 100)						
Arizona	Feb.	110.3	-0.2	3.3	NA	NA
BUILDING PERMITS (Total Dollar Value in Thousands)						
Maricopa County	Jan.	302,148	39	-7	302,148	-7
Pima County	Jan.	36,944	-27	-33	36,944	-33
Balance of State	Jan.	41,910	10	-19	41,910	-19
Arizona	Jan.	381,002	24	-12	381,002	-12
TOTAL HOUSING UNITS AUTHORIZED						
Maricopa County	Jan.	2,739	48	-19	2,739	-19
Pima County	Jan.	646	-54	-19	646	-19
Balance of State	Jan.	906	23	-14	906	-14
Arizona	Jan.	4,291	7	-18	4,291	-18
HOME SALES						
Maricopa County - Number	Feb.	3,850	-18	0	8,590	12
Maricopa County - Median Price	Feb.	79,500	1.7	6.0	79,000	6.6
HOUSING AFFORDABILITY INDEXES						
Metropolitan Phoenix - New Homes	4th Qtr.	98	3.2	18.1	NA	NA
Metropolitan Phoenix - Resale Homes	4th Qtr.	114	7.5	18.8	NA	NA
MORTGAGE INTEREST RATES (Conventional, 30-year, Fixed-rate)						
Maricopa County	March	8.9	0.0	-10.1	NA	NA
POPULATION ESTIMATES (In Thousands)						
Maricopa County	4th Qtr.	1,942	1.0	4.5	NA	NA
Arizona	4th Qtr.	3,392	0.9	3.8	NA	NA
ELECTRICAL POWER SALES (In Millions of Kilowatt Hours)						
Arizona	Feb.	2,635	-15.3	7.3	5,746	11.7

NA = Not Applicable

Source: Center for Business Research, College of Business, Arizona State University

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1986 Arizona GSP Revised Down

At an inflation-adjusted 4.8 percent, the Arizona Gross State Product (GSP) for 1986 grew much more slowly than previously projected. Adjusted GSP, which excludes mining and agriculture – volatile industries that do not follow the business cycle – rose 5.7 percent; the long-term average is 5.5 percent.

These GSP figures indicate the Arizona economy slowed dramatically during 1986. First quarter growth was quite strong, but increases during the second quarter were much smaller, especially as measured by unadjusted GSP (see Table 1). The downward revision of the annual average increase resulted almost entirely from a third quarter reduction in the rate to near zero from an approximately 8 percent annualized rate. During the fourth quarter, the Arizona gross product declined.

EVALUATION OF 1986 GSP

While the Arizona economy's growth did slow during 1986, the quarterly GSP figures probably do not portray the actual pattern. Estimates of GSP are highly dependent on data produced by the U.S. Department of Commerce, particularly personal income statistics. These 1986 data remain subject to considerable revision.

Data Deficiencies

Though the annual average for 1986 probably is reasonably accu-

See "GSP," page 2

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Population Growth Drives Arizona Economy

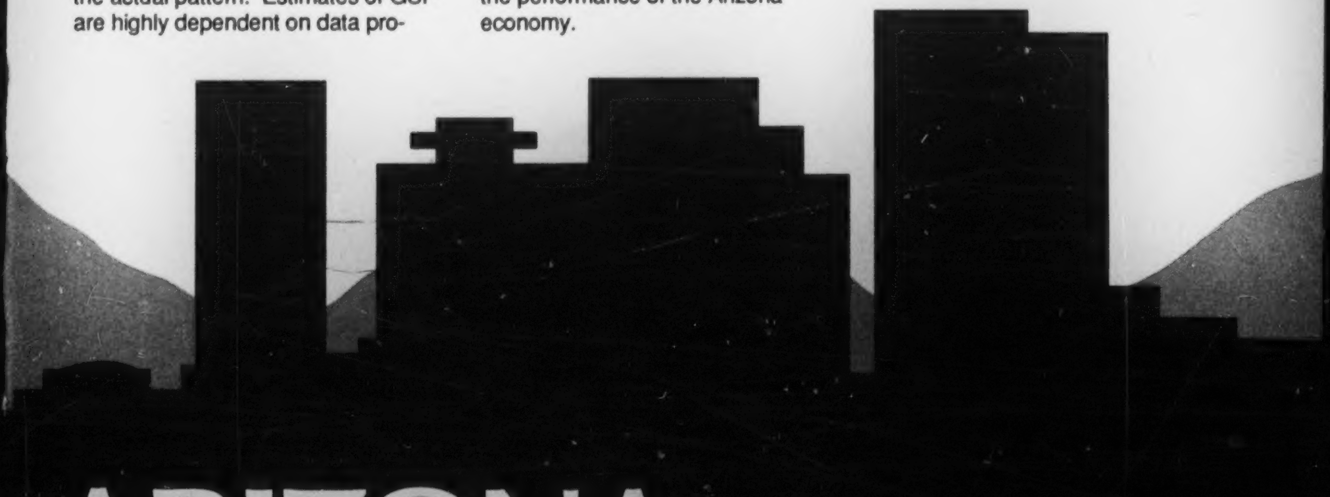
People have been flocking to Arizona for more than three decades. From three-quarters of one million in 1950 – fewer residents than living in the *city* of Phoenix today – Arizona's population had exploded to nearly 3.4 million at the end of 1986.

Migration, rather than net natural increase (the number of births minus the number of deaths), accounts for most of Arizona's population gains. However, migration to the state is not steady, ebbing and flowing with cyclical economic recessions and expansions. This variability of migration has affected the performance of the Arizona economy.

GSP-GNP COMPARISON

During the last 16 years, the state's economy, measured by Gross State Product (GSP), has grown twice as rapidly as the national economy, measured by Gross National Product (GNP). Real GSP growth averaged 5.5 percent per year between 1970 and 1986, while annual real GNP growth was just 2.7 percent. This wide differential is explained by the state's more rapid population growth, *not* by a more productive economy.

See "Growth," page 5



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"GSP," from page 1

rate, the quarterly pattern of personal income estimates is highly questionable. The discrepancies can be demonstrated through a step-by-step comparison of economic measures.

Employment, which already has been revised, is the base measure. The change in employment should correlate highly with the change in the wage and salary disbursements portion of personal income. As indicated in Table 2, this relationship did not hold during 1986. In particular, wages and salaries seem to be grossly underestimated for the third quarter, but slightly overestimated for each of the other quarters.

The next comparison adds other components such as proprietor's income to wage and salary disbursements to arrive at the earnings portion of personal income. Wages and salaries do correspond to earnings, as expected.

Earnings represent a large portion of GSP. Other components of GSP are measured indirectly, using ratios, in particular the proportion of national income to national personal income. If these ratios fluctuate randomly, GSP will not correlate strongly with earnings, as occurred during 1986.

To summarize, first quarter GSP growth is too high because both wages and salaries and the ratios were overestimated. Second quarter GSP growth probably is reasonably accurate, as the downward correction in the ratios was offset by the overestimate of wages and salaries. Because of the underestimate of wages and salaries, third quarter GSP growth is far too low. As in the second quarter, the fourth quarter figure probably is reasonably accurate, with lower ratios offsetting the overestimate of wages and salaries.

Subjective correction of these apparent measurement errors produces a completely different pattern of Arizona economic growth. Through the first three quarters of 1986, the Arizona economy probably gradually slowed, continuing the deceleration that began in mid-1984. In the fourth quarter, however, growth abruptly ceased.

The Arizona coincident index generally substantiates this pattern, indicating that expansion during the third quarter was more rapid than during the second quarter and that the Arizona economy declined slightly during the fourth quarter.

Subsequent revisions to personal income and GSP may correct the quarterly pattern. The net effect of the revisions probably will be slight, but the chance of upward revision to annual GSP exceeds the probability of lower estimates.

Sectoral Performance

The moderation of the Arizona economic expansion during 1986 can be traced particularly to two sectors. After three consecutive years of double-digit expansion – a typical cyclical occurrence – the gross product of the construction industry rose only a modest amount in 1986; it declined during the second half of the year. Of more importance because of its large size, the gross product of the trade industry experienced slower growth, dropping from a rate of 10 percent in 1985 to 3 percent in 1986. This deceleration alone caused one-half of the 2.5-percentage-point difference in total GSP growth between 1985 and 1986. The subpar performance corresponds with weak increases in trade employment and retail sales.

Most of the other sectors also expanded less rapidly in 1986 than in 1985 (see Figure I). The major exception was services, which held steady at a 7 percent rate. The finance, insurance and real estate industry led the expansion with a 9 percent rate. For the second consecutive year, the gross products of mining and agriculture declined.

SECTORAL SHARES

Before inflation-adjustment, the Arizona GSP totaled $51.4 billion in

TABLE 1
ECONOMIC GROWTH

	Arizona Gross State Product				**Gross National Product**
Quarter	*Billions of Current Dollars, Annualized*	*Billions of 1982 Dollars, Annualized*	*Annualized Percent Change (1982 Dollars)*	*Annualized Percent Change (Adjusted GSP)**	*Annualized Percent Change (1982 Dollars)*
First 1985	46.821	42.516	17.5	15.8	3.0
Second 1985	47.218	42.450	-0.6	3.2	2.3
Third 1985	48.319	43.089	6.0	7.5	4.1
Fourth 1985	49.134	43.548	4.3	5.0	2.1
First 1986[r]	50.802	44.850	12.0	10.6	3.7
Second 1986[r]	51.217	45.048	1.8	4.7	0.6
Third 1986[r]	51.623	45.080	0.3	0.2	2.7
Fourth 1986	51.846	44.902	-1.6	-0.9	1.1
Annual					
1983	37.821	36.251	5.7	7.9	3.6
1984	43.156	39.966	10.2	10.3	6.4
1985	47.873	42.901	7.3	8.3	2.7
1986	51.372	44.970	4.8	5.7	2.5

*The adjusted GSP is the annualized GSP in billions of 1982 dollars, minus the contributions of the agriculture and mining industries.

[r] Revised

Source: Center for Business Research, College of Business, Arizona State University; in cosponsorship with the ASU College of Business Dean's Council of 100. GNP data are from the U.S. Department of Commerce, Bureau of Economic Analysis.

1986. Four industries accounted for two-thirds of the total product, led by the $9.1 billion finance, insurance and real estate sector (see Figure II). Ranking second or third in size since 1970, this industry's rapid growth during 1986 made it Arizona's largest, measured by current dollar GSP.

Until 1986, trade consistently had been Arizona's biggest industry, but its below average growth last year caused it to slip to third place with a 16.7 percent share. Services, the second-largest industry with a 16.9 percent share, ranked fifth as recently as 1978. Manufacturing remained the fourth largest industry.

Government's gross product, the fifth greatest in 1986, continued to rise at a sluggish rate compared to those of most other industries. The smallest industries shrank further during 1986: agriculture's share of gross product dropped to 2.0 percent, and mining's portion declined to 2.7 percent.

DEFLATORS

Inflation measured by the Arizona GSP deflator slackened further in 1986 to 2.4 percent, the seventh consecutive deceleration since the 10.3 percent peak in 1979. The deflator measured less inflation in 1986 than in 1985 for each sector except agriculture, in which *deflation* was not as great in 1986 as in 1985.

This pattern of lower inflation corresponds with that of the GNP implicit price deflator (see Figure III). For the fourth consecutive year, the inflation rate measured by the GSP deflator was within four-tenths of one percentage point of the national rate.

EMPLOYMENT AND PRODUCTIVITY

Employment gains during 1986 were fewer than during 1984 or 1985; the rate decelerated from 10 percent in 1984 to 5 percent in 1986. As with GSP, the trade and construction industries were primarily responsible for the moderation, though employment gains were smaller in the manufacturing; government; and finance, insurance and real estate industries as well.

Late in 1986, new job creation ceased, as construction layoffs negated slight increases in most other sectors. Employment growth remained weak during first quarter 1987.

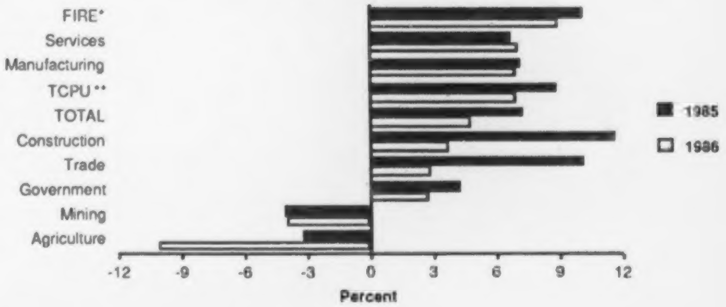
TABLE 2
COMPARISON OF MEASURES
Quarterly Percent Change

Quarter	Employment	Wages and Salaries*	Earnings*	GSP*
First 1986	1.5%	2.0%	2.3%	3.0%
Second 1986	0.7	1.0	1.2	0.4
Third 1986	2.1	0.0	-0.2	0.1
Fourth 1986	0.0	0.6	0.8	-0.4

*Inflation-adjusted

Source: Center for Business Research, College of Business, Arizona State University

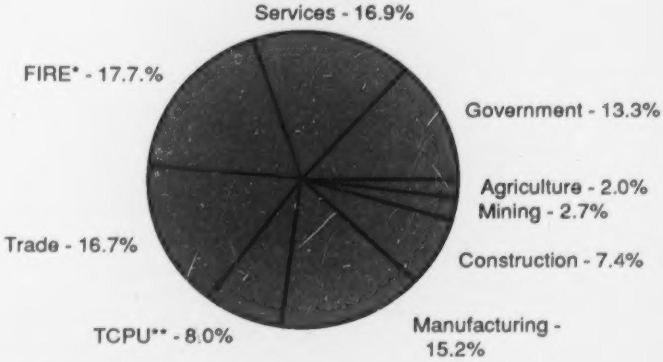
FIGURE I
REAL GSP GROWTH
By Sector, 1985-86



*Finance, Insurance and Real Estate
**Transportation, Communications and Public Utilities

Source: Center for Business Research, College of Business, Arizona State University

FIGURE II
ARIZONA GROSS STATE PRODUCT
1986 Sectoral Shares, In Current Dollars



*Finance, Insurance and Real Estate
**Transportation, Communications and Public Utilities

Source: Center for Business Research, College of Business, Arizona State University

Inflation-adjusted output per employee has changed little since the mid-1970s (see Figure IV). Variations have been cyclical, with improvements during the early stages of a recovery and declines during recessions and later stages of an expansion. This cyclicality results from greater changes in production than employment. Though production may drop sharply during recessions, employers do not lay off workers as dramatically, knowing that they will soon be needed again.

During 1986, output per employee rose minimally, offsetting a slight loss in 1985. Since this gain varies from the typical pattern, it may indicate that GSP will be adjusted up by a small amount in future revisions.

The finance, insurance and real estate sector and the construction and services sectors typically have experienced declines in output per employee, but in 1986, construction recorded a small improvement. Productivity also increased in the manufacturing and mining industries and in the transportation, communications and public utilities industry. Mining again led the gains.

THE EXPANSION IN PERSPECTIVE

Having begun in late 1982, the expansion already was relatively old at the end of 1986. By late 1987, this expansion will be the longest on record during peacetime.

Total growth during the expansion, however, has not come close to the record. From the low in third quarter 1982, GSP had increased 33 percent by late 1986, well short of the 43 percent total gain of the slightly longer expansion during the late 1970s. Even the shorter expansion of the early 1970s registered more growth (35 percent).

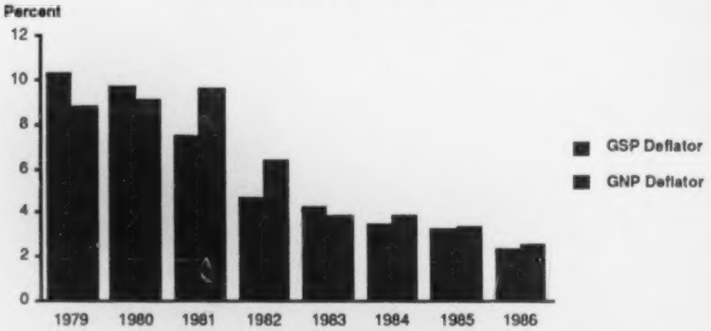
The increase in adjusted GSP compares more favorably. In each year of this expansion, adjusted GSP growth has exceeded that of total GSP (see Figure V).

Compared to the Gross National Product (GNP), long-term average GSP increases have been twice as great. During the current expansion, the GSP has grown nearly twice as fast; adjusted GSP has increased more than twice as rapidly.

OUTLOOK

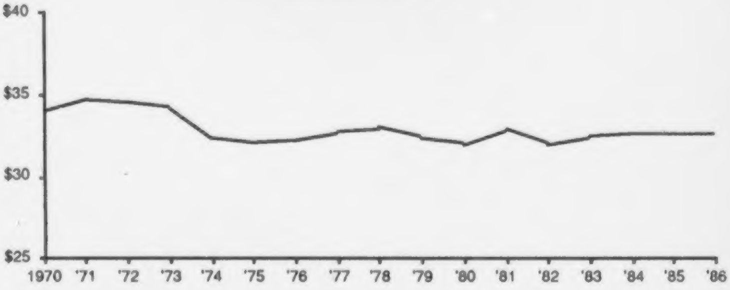
Barring substantial upward revisions to 1986 GSP, annual average GSP growth during 1987 almost certainly will be less than the long-term average of 5.5 percent. Compared to fourth quarter 1985, fourth quarter 1986 GSP was only 3.1 percent higher, a weak base from which to begin measurement of 1987 growth. Further, gains in GSP during first quarter 1987 probably were relatively weak, given the poor employment gains measured from January through March.

FIGURE III
COMPARISON OF INFLATION MEASURES



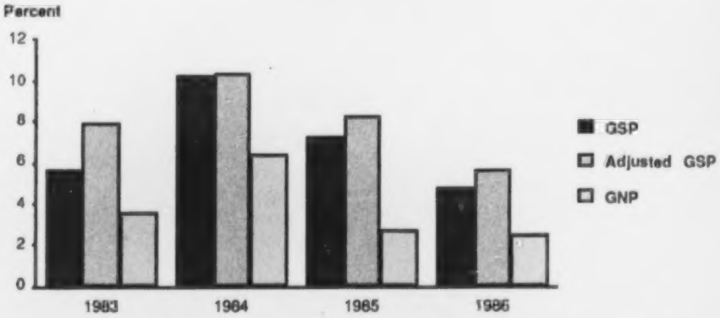
Source: Center for Business Research, College of Business, Arizona State University and U.S. Department of Commerce, Bureau of Economic Analysis

FIGURE IV
ARIZONA OUTPUT PER EMPLOYEE
In Thousands of 1982 Dollars



Source: Center for Business Research, College of Business, Arizona State University

FIGURE V
ARIZONA GSP AND U.S. GNP
Annual Percent Change



Source: Center for Business Research, College of Business, Arizona State University and U.S. Department of Commerce, Bureau of Economic Analysis

During the rest of 1987, economic growth probably will continue at a modest rate. The gross product of the construction industry, however, is likely to decrease; it already had declined between fourth quarter 1985 and fourth quarter 1986. Growth in most of the other sectors probably will be less in 1987 than in 1986. In each industry, the rate of increase between the fourth quarters of 1985 and 1986 was less than the 1986 annual average. Thus, total GSP may gain less than 4 percent during 1987.

– Tom R. Rex
Research Manager

"Growth," from page 1

Dividing the gross products by their respective populations reveals that 1970-86 average growth in inflation-adjusted, per capita GSP was slightly less than that of real, per capita GNP (1.5 percent versus 1.6 percent per year). The cyclical variation, however, has been greater in Arizona than nationally. In particular, the state's per capita economic performance declined more sharply during the 1974-75 and 1981-82 recessions, while economic growth during boom periods has been more rapid than the nation's.

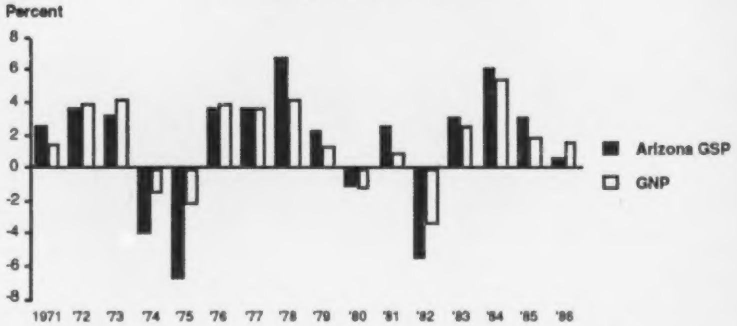
Figure I illustrates not only this cyclicality but also variation in the trend. During the early and mid-1970s, per capita growth of the Arizona economy trailed that of the national economy. Since the late 1970s, except during 1982 and 1986, the Arizona economy has outperformed the national economy, even on a population-adjusted basis. The state's disappointing performance during 1986, however, places the direction of the future trend in doubt.

Despite this more rapid growth in recent years, per capita GSP ($15,418 in 1986) is not even 90 percent of per capita GNP ($17,410). This proportion is lower than it was in 1970 (see Figure II).

Arizona's lower per capita gross product corresponds to its smaller proportion of working-age residents who are employed, compared to the national average. In addition, the state's industrial mix contributes to a lower per capita GSP. While generally not much different from the national mix, Arizona's industrial structure includes a smaller manufacturing sector, which pays more (and therefore has a higher GSP per worker) than most industries.

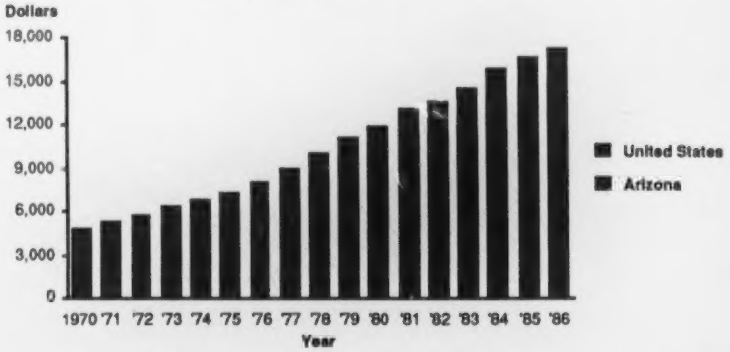
The relative level of GSP per resident has not been boosted much during the current economic expansion. Three consecutive years of record net in-migration explain most of Arizona's superior performance, as measured by real gross product.

FIGURE I
PER CAPITA ECONOMIC GROWTH
Inflation-Adjusted Percent Change



Source: Center for Business Research, College of Business, Arizona State University

FIGURE II
PER CAPITA GROSS PRODUCT



Source: Center for Business Research, College of Business, Arizona State University

PRODUCTIVITY

A comparison of output per employee reveals that the Arizona economy is not as productive as the national economy, an indication confirmed by the lower levels of per capita gross product in Arizona. In 1970, the state's output per employee nearly equaled the national average, but productivity in Arizona declined between 1970 and 1985, while it rose nationally (1985 is the latest year for which national data are available). Consequently, 1985 output per employee in Arizona was less than 90 percent of the national average.

The state's lower productivity may result, in part, from a different industrial mix, even within the major industrial groupings. For example, output per employee is relatively low in certain industries, such as services, that make up a larger share of the Arizona economy than the national economy. However, output per employee was lower in Arizona in every industry except mining and government, for which the measures equaled their national counterparts.

SUMMARY

Arizona's booming economy both causes and relies on population growth. Job creation and economic opportunity attract people to the state at the same time that people moving to Arizona create jobs both by attracting employers to the state and by consuming goods and services. Except when interrupted by national recessions, migration is somewhat self-perpetuating, as is Arizona's rapid economic growth. Take away population growth, and the state would no longer have a "boom" economy. Instead, inferior levels of productivity would place Arizona in a slightly laggard economic position.

– Tom R. Rex
Research Manager

Gross County Product

New Measure Reflects Urban-Rural Economic Disparities

Gross County Product (GCP) estimates clearly reflect the disparity of economic growth between Arizona's metropolitan and rural counties during the early 1980s. From 1980 through 1984, the adjusted real gross products of the urban counties rose 22 to 25 percent, but the growth rates in most of the non-metropolitan counties were less than one-half as much. In four counties, GCP declined.

Figures reported in this article should be considered preliminary, marking a first attempt to calculate GCPs in Arizona. A number of data deficiencies potentially detract from these GCP estimates (see box); nevertheless, the results appear to paint an accurate picture of economic performance during the early 1980s.

CURRENT DOLLAR GCP

With a gross product of more than $27 billion in 1984, Maricopa County contributed two-thirds of the total product of all Arizona counties. Pima County's GCP approached $7 billion. Of the non-metropolitan counties, only Pinal's GCP reached $1 billion.

During the four years ending with 1984, the GCP of Maricopa County rose 56 percent. Every other county's economic growth fell short of the state's overall 46 percent rate, though Pima County's pace was 43 percent. Of the outlying counties, Apache, Cochise and Coconino's GCPs increased the fastest, each at slightly more than 30 percent. In contrast, the gross products of counties dependent on mining and/or agriculture barely advanced. Greenlee County's product fell 5 percent.

SECTORAL SHARES

Most of the rural counties' economies are highly dependent on just a few industries, usually including government and perhaps mining and agriculture. Greenlee County represents the extreme, with 80 percent of its 1984 GCP derived from mining. Other counties with a disproportionate share of GCP contributed by one or two industries include:

- Apache – one-third from government
- Cochise – one-half from government (due to Fort Huachuca)
- Coconino – nearly one-third from government
- Gila – 40 percent from mining
- Graham – 30 percent from government and nearly 20 percent from agriculture
- Pinal – more than 35 percent from mining (down from more than 50 percent in earlier years) and 10 percent from agriculture
- Yuma – nearly one-fourth from agriculture, with an equal share from government

In contrast, the Maricopa County economy depends little on agriculture, mining or government. Only 10 percent of its GCP is derived from the latter, despite Phoenix's distinction as the seat of state government. Pima County's economy also is balanced among several industries.

REAL DOLLAR GCP

Adjusting for inflation is important in analyzing economic performance. For example, between 1980 and 1984, inflation accounted for more than one-half of the 46 percent growth in the sum of the current dollar GCPs.

Real GCP, however, does not necessarily provide the best measure of economic conditions because of the vagaries of the agriculture and mining industries. Each is highly volatile, with a gross product that frequently rises or falls contrary to the economic movement of other industries because of temporary changes in external factors (weather, government subsidies, international competition, etc.). The swings can be so extreme that they override the changes in the rest of the economy.

Further, because prices in each industry fell between 1980 and 1984,

Caution Urged in Using GCP Estimates

Various data and methodological deficiencies may reduce the usefulness and accuracy of the GCP statistics presented in this article. Calculation of GCP depends on personal income estimates of earnings by industry, provided by the U.S. Department of Commerce, Bureau of Economic Analysis.

Personal income series have several shortcomings. By county, data are available only annually, with more than a two-year lag. Temporarily, the situation is even worse. Because of currently in-progress benchmarking of all county personal income data, estimates for 1985 will not be available until next year, when a revised series for 1969 through 1986 will be published. Thus, GCP has been calculated for a limited time frame. Though theoretically the sum of the county products should equal Gross State Product, subsequent revisions to state personal income and to GSP make the sum of the GCPs unequal to the GSP reported in this issue.

Use of the personal income series creates other difficulties. When only a small number of employers exist in a particular county in a given year, earnings by industry may not be published to avoid disclosure of confidential information. In extreme situations, earnings for a specific industry may be negative in a local area for a short time, when total production expenses exceed total gross income plus wages, salaries and other labor income. In these cases, GCP is also negative.

Methodologically, GCP has the same shortcomings as GSP, which largely relate to indirect measurement. They may be more pronounced in a small area in which one or a few industries dominate. In particular, mining and agriculture gross product estimates resulting from the conventional methodology may be misleading.

After revised personal income figures become available next year, the Center plans to calculate GCP for the entire 1969-86 period. Alternative methodologies may also be examined at that time.

TABLE 1
GROSS COUNTY PRODUCT
Percent Change, 1980-84

County	Current GCP	Real GCP	Adjusted Real GCP
Apache	34%	6%	8%
Cochise	32	6	8
Coconino	32	5	5
Gila	1	-1	-13
Graham	11	-6	-6
Greenlee	-5	11	-21
Maricopa	56	25	25
Mohave	22	2	6
Navajo	28	14	4
Pima	43	19	22
Pinal	5	7	13
Santa Cruz	22	-2	-1
Yavapai	23	5	9
Yuma and La Paz	18	1	7
SUM OF COUNTIES*	46	20	22

*Not equivalent to the reported change in Arizona Gross State Product because of subsequent revisions to GSP.

Source: Center for Business Research, College of Business, Arizona State University

greater gains (or smaller losses) were measured in real dollars than in current dollars. Such a circumstance may disguise the true performance of local economies. For example, Greenlee County is highly dependent on copper mining, an industry that experienced considerable difficulty during the early 1980s. As a result, the work force shrunk and the remaining workers suffered from a reduction in wages, greatly affecting the local economy. Yet because the mines did not shut down for long and because of vastly improved productivity, the production of copper did not slow that much.

Thus, despite a decline in current dollar GCP between 1980 and 1984, Greenlee's real dollar GCP rose because of a healthy 21 percent increase in mining's real gross product; the decline in price was greater than the decrease in production. (In contrast, counties such as Pinal experienced many actual mine closures, with subsequent sharp declines in mining gross product, even after inflation adjustment).

Adjusted GCP

The 11 percent increase in Greenlee's real GCP between 1980 and 1984 is in sharp contrast to the 21 percent decrease in adjusted real GCP (excluding mining and agriculture). The gross products of each of the other seven industries declined. Thus, the adjusted measure probably better represents the economic conditions that prevailed in Greenlee County.

Gila County's real adjusted gross product also fell because of its reliance on mining. Although Graham County has little mining activity, many miners live and/or shop in its communities. Further, Graham County is a trade center for the slumping agriculture industry. Thus, the Graham GCP dropped (see Table 1).

The remaining rural counties suffered from other problems. In Santa Cruz County, 40 percent of the economy revolves around trade, mostly with Mexico. That country's economic problems and peso devaluations caused the Santa Cruz GCP to fall.

Despite adjusted real statewide growth totaling more than 20 percent between 1980 and 1984, the only economies that expanded at double-digit rates were those of the metropolitan areas and Pinal County. In unadjusted terms, Pinal's economic growth was slight, because of slumps in its sizable mining and agriculture industries. The rest of the economy, however, was able to shake off these problems because of the county's location between the two urban areas and its access to transportation. In particular, a commercial/industrial construction surge in Casa Grande boosted the local economy.

Analysis of the Economic Cycle

Adjusted real GCP reveals that the non-metropolitan counties suffered more from the 1981-82 recession than did the urban areas. Most of the rural counties experienced economic decline in both years, sometimes at double-digit rates. Only Pinal and Yuma Counties eked out slight gains in 1981. In contrast, Maricopa and Pima Counties had modest gains in 1981. Pima's adjusted real GCP was flat in 1982, and even the vibrant Phoenix area economy did not avoid a slight loss.

During the 1983-84 recovery, however, most of the rural economies performed better, with several of them growing at a faster pace than the metropolitan areas. For example, in 1983, the GCPs in Mohave and Yavapai each grew 10 percent, faster than Maricopa's 9 percent pace. In 1984, GCP growth in Mohave and Apache Counties exceeded that of Maricopa County, while the economies of Yavapai, Santa Cruz and Greenlee Counties all grew slightly slower, but still at a rate greater than that of Pima County.

Despite this relatively fast growth, the 1984 adjusted real GCP of several counties barely exceeded the 1980 value. For example, despite leading the state in growth in 1983-84, Mohave County's gross product was only 6 percent higher in 1984 than in 1980.

Not all counties participated in the strong recovery, however. In 1983, the GCP of Graham and Santa Cruz Counties declined while, in 1984, Gila GCP was flat.

OUTLOOK

The disparity in economic growth between the rural and urban areas of Arizona during the early 1980s probably was extreme, largely due to serious problems in the mining and agriculture industries. Though the difference may have narrowed by the mid-1980s, relatively slow growth in most non-metropolitan areas is likely to persist through the 1980s.

– Tom R. Rex
Research Manager

Home Sales Continue Upward Climb in First Quarter

First quarter 1987 home sales in the Phoenix metropolitan area were 10 percent higher than during first quarter 1986 (see Table 1), marking the seventh consecutive quarter in which sales exceeded the number of the year-earlier quarter.

Seasonally adjusted, the number of sales rose 4 percent between fourth quarter 1986 and first quarter 1987, to 16,460, a volume exceeded only in third quarter 1986. A record number of sales of existing townhouses and condominiums (2,780, seasonally adjusted) offset fewer sales of new homes, producing the quarterly increase. Resale townhouse and condominium sales accounted for 17 percent of all sales during the first quarter, a record proportion that is double the annual percentages for 1984 and 1985.

Continued declines in mortgage interest rates boosted sales. Rates for 30-year, fixed-rate, conventional loans dipped below 9 percent in February, their lowest level since early 1978. Some interest rates for adjustable-rate mortgages dropped below 7.5 percent.

MEDIAN HOME PRICE AND APPRECIATION RATE

Although the median sales price was lower in the first quarter than in the two preceding quarters, this relationship reflects the typical seasonal pattern. Seasonally adjusted, the median price rose 0.5 percent for the third consecutive quarter. Compared to first quarter 1986, prices were a moderate 4 percent higher.

After adjusting single-family resale prices for home size, the median price per square foot increased 3.0 percent between the first quarters of 1986 and 1987, making five consecutive quarters of annual advances between 3 and 4 percent (see Figure I). Price changes on townhouses and condominiums have been much more erratic.

This stability in the rate of housing price increases is substantiated by the appreciation rate. For single family homes, the quarterly rate remained 0.6 percent, placing the annual rate between the first quarters of 1986 and 1987 at 2.6 percent. Comparable appreciation rates for townhouses and condominiums were lower: a quarterly rate of 0.1 percent and an annual rate of 0.5 percent.

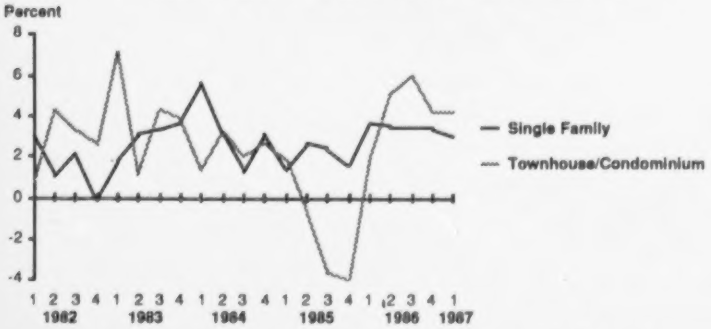
OUTLOOK

Second quarter 1987 home sales could advance slightly because of the two-month-or-longer lag from a change in mortgage interest rates until its impact on sales figures. Rising interest rates in early April signal that peak sales activity probably will occur during the spring.

Until April, most forecasters expected interest rates to rise only modestly during 1987. The volatility during April, however, makes those forecasts obsolete. Should 30-year, fixed-rate conventional mortgage rates stabilize at or below 10 percent, home sales during the second half of 1987 probably will remain near the levels of 1986 and early 1987. Higher interest rates should noticeably reduce the number of sales, much as they did during 1984.

– Tom R. Rex
Research Manager

FIGURE I
MEDIAN SALES PRICE PER SQUARE FOOT, RESALE HOMES
Percent Change from Same Quarter of Previous Year



Source: Arizona Real Estate Center and Center for Business Research, College of Business, Arizona State University

TABLE 1
METROPOLITAN PHOENIX HOME SALES

	Single Family			Townhouse/Condominium			Grand
First Quarter 1987	*Resale*	*New*	*Total*	*Resale*	*New*	*Total*	Total
Median sales price	$79,500	$94,500	$81,425	$64,500	$68,975	$65,000	$78,100
Percent change from:							
Fourth quarter 1986	0.6	2.8	-1.2	1.6	1.6	0.0	-1.2
First quarter 1986	6.0	7.1	4.4	2.4	-0.8	0.0	4.1
Number of sales	1,270	10,080	11,340	470	2,510	2,980	14,320
Percent change from:							
Fourth quarter 1986	-49	-4	-13	-33	25	10	-9
First quarter 1986	0	6	5	-13	51	35	10

Source: Arizona Real Estate Center and Center for Business Research, College of Business, Arizona State University; from data supplied by Marketron Services, Inc., Phoenix.

Housing Affordability Soars in First Quarter

Affordability of Phoenix area homes again jumped during first quarter 1987, with the index for new homes exceeding 100 for the first time since the indexes began in 1981. At 102, the index for new homes was 4 percent higher than in fourth quarter 1986 and 12 percent greater than in first quarter 1986. Comparable gains in the index for resale homes (122 in first quarter 1987) were 7 and 14 percent.

An index at or above 100 indicates that a median-income household is able to qualify for a median-priced home, assuming a 15 percent down payment on a fixed-rate, conventional, 30-year mortgage and an income qualification factor of 28 percent. During first quarter 1987, a median-income household could afford a $97,275 home – more than the median-priced new or resale home (see Table 1).

COMPONENT CHANGES

Throughout the 1980s, changes in mortgage interest rates have had a far greater impact on housing affordability than either increases in household incomes or variations in home prices (see Figure I). During first quarter 1987, the effective mortgage interest rate (contract rate plus fees and charges, or "points") dropped to 9.4 percent, 0.7 percentage points lower than in the previous quarter.

The affordability index for resale homes rose more than that for new homes, continuing a trend, because of a smaller gain in the median price of resale homes. Before seasonal adjustment, the quarterly increases in median price were 0.6 percent for resale homes and 2.8 percent for new homes.

As a result of the changes in interest rates and home prices, the monthly housing payment declined for new and resale homes. At the same time, household incomes rose, leading to surges in the affordability indexes.

NATIONAL AFFORDABILITY

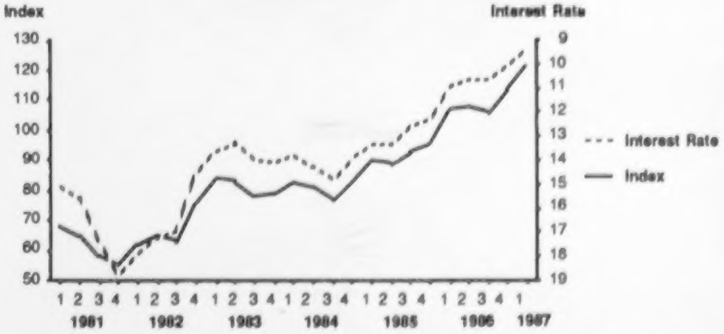
Affordability of homes nationally also improved during the first quarter. For new homes, the national index advanced by an amount similar to the increase in the Phoenix area, keeping the national index four percentage points lower. For resale homes, the improvement in affordability was not nearly as great nationally as in the Valley because of a much larger increase in the median sales price nationally. At 114, the national index for resale homes was a record amount lower than the Phoenix area index.

OUTLOOK

The sharp increase in mortgage interest rates at the beginning of the second quarter marks a sudden end to the improvements in housing affordability. Even if effective rates stabilize at the level prevailing in late April, exceeding 10 percent, the affordability indexes probably will fall back to levels similar to those of mid-1986. An index of 100 or better for new homes may prove to be a one-quarter occurrence.

– Tom R. Rex
Research Manager

FIGURE I
AFFORDABILITY INDEX, RESALE HOMES
AND EFFECTIVE MORTGAGE INTEREST RATE
Metropolitan Phoenix, 1981-87



Source: Arizona Real Estate Center and Center for Business Research, College of Business, Arizona State University. Interest rates are from the Federal Home Loan Bank Board *News*.

TABLE 1
HOUSING AFFORDABILITY INDEXES
Metropolitan Phoenix

			Resale Homes			New Homes		
Quarter	*Median Gross Monthly Income*	*Effective Interest Rate*	*Median Sales Price*	*Monthly Housing Payment*	*Affordability Index*	*Median Sales Price*	*Monthly Housing Payment*	*Affordability*
1st 1986	$2,730	11.0%	$75,000	$710	107	$88,200	$840	91
2nd 1986	2,760	10.7	77,150	720	108	87,950	820	95
3rd 1986	2,800	10.7	79,150	740	106	88,850	830	95
4th 1986	2,840	10.1	79,100	700	114	91,900	810	98
1st 1987	2,890	9.4	79,500	660	122	94,500	790	102

Source: Arizona Real Estate Center and Center for Business Research, College of Business, Arizona State University. Interest rates are from the Federal Home Loan Bank Board *News*.

April Purchasing Indicators Up, Including Prices

The Arizona economy continued its strong upward course in April, moving toward the midpoint in its fifth year of expansion. Delivery time on vendor shipments lengthened; inventory levels rose; and new orders, production, and employment all enjoyed healthy increases. The only negative note was sounded by rapidly increasing prices, which almost certainly will create problems down the road.

The very positive performance this year by all of the major economic indicators likely will continue over the balance of the year. New order receipts, production rates, and employment should move up in the months immediately ahead. Much of the growth will be fueled by the need and willingness to rebuild inventories, which started at the beginning of the year. Prices will continue to increase, at a much higher rate than during the past few years.

Table 1 presents the results of the April survey of Arizona purchasing managers. Analysis of these results follows.

PRICES

Prices paid for major purchased items went up sharply in April. This was the highest month-to-month increase in close to three years (since June 1984). Evidently, some domestic producers, helped by the dollar's drop in value, are raising prices to boost profit margins. The sharp upward tilt in the price curve is warning that higher inflation rates soon will be back.

DELIVERY TIME

Delivery time on shipments from vendors grew longer, as this indicator experienced the largest monthly gain since May 1986. While no major shortages are evident yet, the acceleration in the economy continues to remove slack from vendor operating rates and may present major problems for Arizona buyers in the last half of 1987.

INVENTORY LEVELS

Inventory levels of purchased materials rose for the fourth consecutive month, although they were well under March levels. However, with the exception of March, it still was the highest jump in two years (since April 1985). Inventory rebuilding, as needed by the higher operating rates, will fuel further growth over the next several months.

NEW ORDERS

New orders received by Arizona firms registered a strong advance in April, but it was somewhat smaller than the March jump. The new order indicator has performed with consistent strength in each of the past four months, as increases surpassed those of any month in the second half of 1986. Higher levels of incoming business to Arizona firms will further stimulate the production and employment needed to service this new business.

PRODUCTION

Production experienced a good gain in April and at a rate only slightly less than in March. Both the March and April increases were larger than those of any month since February 1986, which attests to the strength of the current expansion.

EMPLOYMENT

Employment continued to grow and at a stepped-up rate to meet the higher production requirements. This was the fourth consecutive monthly increase, following on the heels of net employment declines during the last half of 1986.

PURCHASES

Purchases of materials and supplies went up in April at approximately the same rate as in March, when purchases grew at the greatest rate since May 1984. This higher level of purchases will further stimulate economic growth over the next several months.

– Harold Fearon

Dr. Fearon is the National Association of Purchasing Management Professor in the ASU College of Business.

Arizona Purchasing Survey

Now in its 25th year of monthly reporting, Dr. Harold Fearon's survey of Arizona business conditions utilizes data from a questionnaire sent to members of the purchasing management associations of Arizona and southern Arizona. It asks them to indicate the direction of activity - higher, unchanged, or lower - of seven key measures of economic activity in the month just ended. These purchasing managers deal daily with supply, demand, and price factors in the marketplace; their aggregate readings have accurately charted the state's economic course for two decades, providing timely data on turning points.

TABLE 1
APRIL PURCHASING SURVEY

	Percent of Purchasing Managers Indicating Each Response (April compared to March)		
Key Indicators	*Higher*	*Same*	*Lower*
Prices paid for major commodities	37	60	3
Delivery time from vendors	27	66	7
Purchased materials inventory level	29	52	19
New orders received	43	35	22
Production	40	47	13
Employment	27	64	9
Purchases	52	34	14

Source: Purchasing Management Association of Arizona and the Purchasing Management Association of Southern Arizona.

Arizona Leading Index Declines Again in March

The Arizona Index of Leading Economic Indicators declined a small amount in March, its second consecutive monthly dip, to 110.2, from a revised 110.4 in February (see Figure I).

One-half of the index components advanced in March, a proportion similar to those of the preceding several months. A diffusion index between 40 and 60 percent is indecisive, representative of neither a recessionary nor a strong expansionary period.

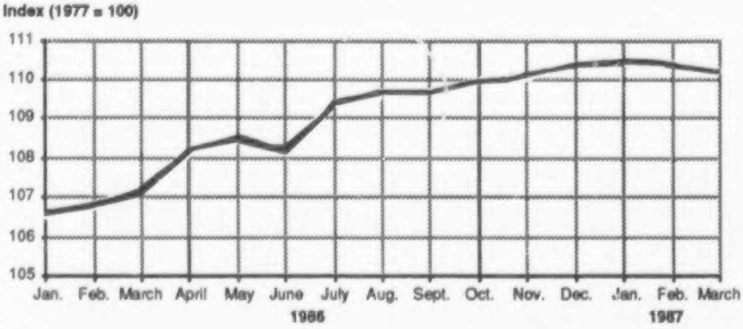
All of the indicators that gained in March were derived from a survey of Arizona purchasing managers, led by an increase in the purchased materials inventory level (see Table 1). The net gain in the five indicators was the largest in four years, but their level was barely higher than it was one year earlier.

Advances in these five components were offset by small declines in each of the other indicators. The national money supply (M2) recorded its second straight decrease, a rare occurrence except preceding and during a recession.

Residential building permits continue to fluctuate from month to month, but remained at a relatively high level in March. Hours worked in the manufacturing industry declined for the fourth time in the last five months, while the number of first-time unemployment claims rose, a negative indicator.

For the third consecutive month, the change in sensitive materials prices negatively contributed to the index. This indicator has varied in short cycles of approximately three months for the last two years; the losses during first quarter 1987 do not completely negate the gains recorded between October and December.

FIGURE I
ARIZONA INDEX OF LEADING ECONOMIC INDICATORS



Source: Center for Business Research, College of Business, Arizona State University

TABLE 1
NET CONTRIBUTION OF INDIVIDUAL COMPONENTS TO THE ARIZONA INDEX OF LEADING ECONOMIC INDICATORS

	Net Contribution+			
	Dec.	*Jan.*	*Feb.*	*Mar.*
Delivery Time*	-.06	-.10	.08	.04
Inventory Levels*	.08	.03	-.01	.10
New Orders*	.11	.09	-.03	.07
Production*	-.04	-.01	.00	.06
Employment*	-.09	.10	.05	.01
Residential Building Permits	.17	-.19	.25	-.05
Unemployment Insurance Claims	-.27	.20	.01	-.13
Average Workweek, Manufacturing	-.12	.09	-.07^r	-.02
Money Supply	.32	.06	-.21	-.12
Change in Sensitive Materials Prices	.14	-.16	-.19	-.11
OVERALL INDEX	.24	.13^r	-.13^r	-.17

^{r}Revised

+The net contribution of each component is calculated by multiplying the monthly percent change in its index by its relative importance.

*Based on indicators from the purchasing management associations of Arizona and southern Arizona.

Source: Center for Business Research, College of Business, Arizona State University

OUTLOOK

The stronger economic growth that was signaled by the leading index during spring and summer 1986 never developed. Instead, the Arizona economy has remained relatively weak during early 1987, after slowing markedly in fourth quarter 1986. For example, following no change in employment during fourth quarter 1986, slight growth of 0.4 percent occurred during first quarter 1987.

Recent performance of the leading index suggests that the level of economic activity through late 1987 should remain stable. The chance of a recession, though greater than at any time during this economic cycle, remains less than 9 percent.

Future performance of the leading index likely will stay weak. The surge in interest rates in April probably will adversely affect residential building permits. The national money supply, which pushed the index up in 1986, has slipped into a slower growth phase. No other sector of the economy seems likely to boost Arizona's economic performance during the next several months.

– Tom R. Rex
Research Manager

ARIZONA ECONOMIC INDICATORS

	Month or Quarter	Value	Percent Change from Previous Period	Percent Change from Year Ago	Year-to-Date Value	Year-to-Date Percent Change from Year Ago
GROSS STATE PRODUCT						
(In Billions of Dollars, at Annual Rate)						
Arizona - Current Dollars	4th Qtr.	51.846	0.4	5.5	NA	NA
Arizona - 1982 Dollars	4th Qtr.	44.902	-0.4	3.1	NA	NA
CONSUMER PRICE INDEX (1977 = 100)						
Metropolitan Phoenix	1st Qtr.	198.0	2.3	3.3	NA	NA
INDEX OF LEADING ECONOMIC INDICATORS (1977 = 100)						
Arizona	March	110.2	-0.2	2.9	NA	NA
BUILDING PERMITS						
(Total Dollar Value in Thousands)						
Maricopa County	Feb.	267,919	-11	-16	570,073	-12
Pima County	Feb.	48,014	29	-47	84,960	-42
Balance of State	Feb.	39,159	-6	-11	81,079	-16
Arizona	Feb.	355,092	-6	-22	736,112	-17
TOTAL HOUSING UNITS AUTHORIZED						
Maricopa County	Feb.	2,371	-13	-40	5,110	-30
Pima County	Feb.	585	-9	-34	1,231	-27
Balance of State	Feb.	696	-23	-47	1,602	-32
Arizona	Feb.	3,652	-14	-40	7,943	-30
HOME SALES						
Maricopa County - Number	April	4,920	-14	2	19,240	8
Maricopa County - Median Price	April	79,675	2.8	4.8	78,500	4.1
HOUSING AFFORDABILITY INDEXES						
Metropolitan Phoenix - New Homes	1st Qtr.	102	4.1	12.1	NA	NA
Metropolitan Phoenix - Resale Homes	1st Qtr.	122	7.0	14.0	NA	NA
MORTGAGE INTEREST RATES						
(Conventional, 30-year, Fixed-rate)						
Maricopa County	April	10.0	12.4	2.0	NA	NA
POPULATION ESTIMATES						
(In Thousands)						
Maricopa County	1st Qtr.	1,961	1.0	4.2	NA	NA
Arizona	1st Qtr.	3,422	0.9	3.6	NA	NA
ELECTRICAL POWER SALES						
(In Millions of Kilowatt Hours)						
Arizona	March	3,030	15.0	16.0	8,777	13.1

NA = Not Applicable

Source: Center for Business Research, College of Business, Arizona State University

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CENTER FOR BUSINESS RESEARCH

Industrial Comparison Update

Services Sector Tops Size, Growth Lists

Arizona's largest industry is also its fastest growing, based on a composite of various economic measures. Services leads the pack, followed relatively closely by the trade, manufacturing and government sectors; the latter is growing slowly. In contrast, another service-related sector, finance, insurance and real estate (FIRE), is expanding nearly as rapidly as the services sector.

The trend toward services – the second-ranked industry as recently as 1980 (behind trade) – corresponds to the national pattern and is likely to persist. This changing economic picture is not always accepted (see box on page 2).

1986 INDUSTRIAL STRUCTURE

The sectoral shares of Arizona's nine major industries, defined by the Standard Industrial Classification (SIC), are provided in Figure I for each of the three most important economic measures: employment, the earnings by industry portion of personal income (PI) and Gross State Product (GSP). (The latest year for which data are available varies from 1984 to 1986, depending on the source and geographic coverage). Perfect correspondence does not exist among these measures – for example, the sectoral share of a low-paying, manpower-

See "Industries," page 2

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Quarterly Economic Forecast Update

Sluggish Arizona Economy To Improve in '88

The Arizona economy is likely to experience a slower rate of expansion during 1987 than previously forecast and to improve somewhat in 1988. This slower-growth outlook is gaining wider acceptance as economic data for 1986 and early 1987 are released. Most indicators reveal a significantly weaker regional economy than analysts had expected, with Arizona not faring very well.

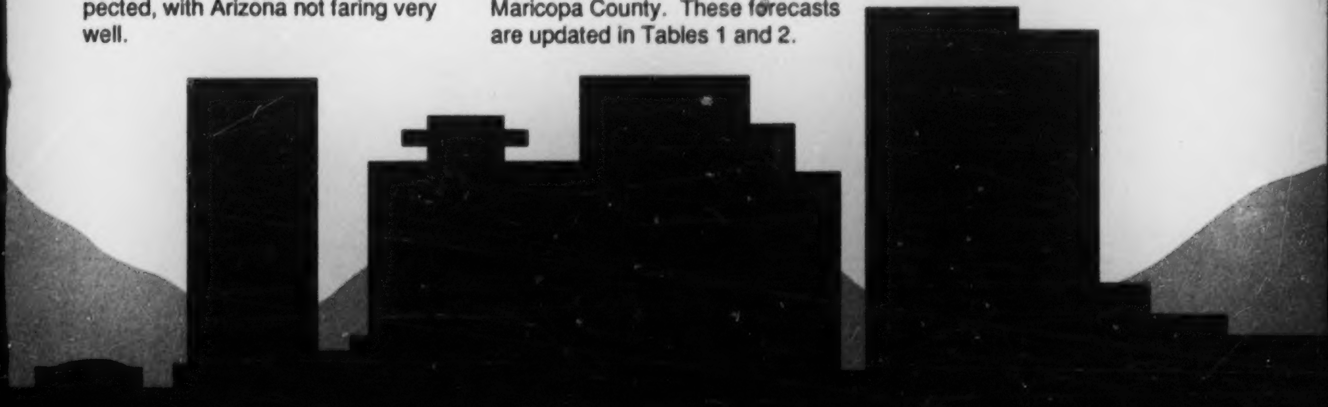
The U.S. economy, as a whole, continues its reasonably healthy performance. The national outlook implicit in the forecasts for Arizona and the Phoenix area is described in the article that begins on page 8.

In the April *Arizona Business*, the Economic Outlook Center (EOC) predicted modest expansion during 1987 and 1988 for Arizona and Maricopa County. These forecasts are updated in Tables 1 and 2.

CONSTRUCTION

The pace of homebuilding in the state had slackened even before the spring's sharp rise in mortgage

See "AZ Forecast," page 6



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JULY 1987

Services: Fact vs. Stereotype

The fact that services is not only Arizona's largest industry but also its fastest growing is not always well received by economists and others because of misleading stereotypes of service work. These include perceptions of menial, low-paying positions and the concept that services is a support industry subsidiary to primary industries such as mining, agriculture and manufacturing.

The reality, however, is that much of services consists of information-centered businesses or firms that perform technologically sophisticated functions. Workers bring a high skill level to their job and are rewarded with relatively high and fast-growing wages. In Arizona, nearly one-half of services employment can be classified as "professional services," including health services, legal services, engineering and architectural services and some portions of business services. Included in the latter category are data processing services and software producers.

As society has evolved, some services have become essential rather than merely a secondary product. Information, for example, is beginning to be perceived as a necessary good. It is an almost infinitely expandable resource, on which significant economic growth can be based for an indefinite period of time. Similarly, constantly improving health services are now viewed as indispensable. This sector alone provides one-third of the total personal income of Arizona's services industry.

Thus, the stereotypes apply to a shrinking portion of the industry. That they remain at all seems rooted in traditional economic thought. For example, according to Adam Smith, the father of classical economics: "The labour of some of the most respectable orders in society (lawyers, physicians, men of letters, government officials) is, like that of menial servants, unproductive of any value."

"Industries," from page 1

dependent industry will be greater measured by employment than by PI – but general agreement is apparent.

Services is the largest industry, based on both personal income (23 percent share) and employment (25 percent share). Measured by GSP, services is the second largest industry, tightly bunched with the FIRE and trade sectors. The smallest of the major industries are the two original mainstays of the Arizona economy, mining and agriculture, each contributing less than a 3 percent share of employment, PI or GSP.

County Industrial Structure

By any economic measure, the two metropolitan counties (Maricopa and Pima) dominate the Arizona economy, with more than 80 percent of all activity. As a result, the state's industrial structure reflects the makeup of the urban areas, particularly metropolitan Phoenix, which alone contributes nearly two-thirds of Arizona economic activity. Of the non-urban counties, Coconino, Mohave and Yavapai most closely resemble the state's overall industrial profile (see Table 1).

In other non-metropolitan counties, however, much different industrial structures prevail. Several counties remain highly dependent on agriculture and/or mining. Even more significant is government, which ranks as the first or second largest industry in every non-urban county but Mohave. In contrast, government ranks only fourth in Maricopa County, despite the fact that Phoenix is the seat of state government.

Services and trade are important in most Arizona counties, each among the top two industries in roughly one-half of the counties. Manufacturing is the third-to-fifth largest industry in most counties, but its level ranges from first in Gila County to eighth in La Paz County. The finance, insurance and real estate sector ranks sixth or lower in all counties except Maricopa; this sector commonly concentrates in regional centers.

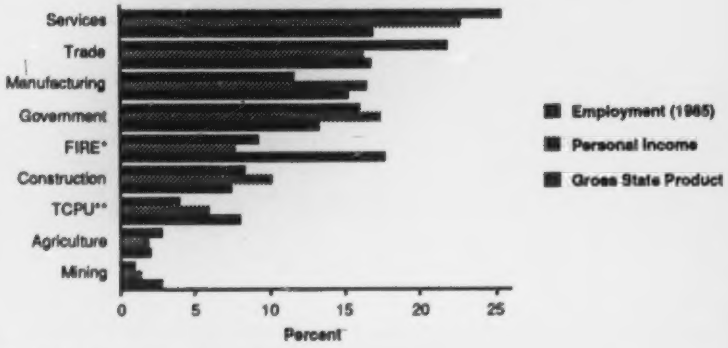
The relative size of the construction industry usually occupies between the fifth and seventh positions, more consistent across counties than any other industry. Transportation, communications and public utilities (TCPU) generally ranks in the same range, but this industry is relatively important in the small counties with large power plants.

Component Industries

The U.S. Department of Commerce subdivides the SIC's nine major industries into more than 70 subsectors; personal income and employment data for 1985 are available for each. The largest subsectors are presented in Tables 2 and 3.

Corresponding with the Arizona rankings shown in Table 1, two major industrial groups, services and trade, are most frequently represented. Of the top 10 subsectors, they account for one-half when measured by employment and for three when gauged by PI. Of the top 25 component industries, services and trade

FIGURE I
ARIZONA SECTORAL SHARES, 1986



*Finance, Insurance and Real Estate
**Transportation, Communications and Public Utilities

Source: Center for Business Research, College of Business, Arizona State University; and U.S. Department of Commerce, Bureau of Economic Analysis.

have six subsectors each on the employment-based list and five subsectors each on the personal-income-based list.

Least frequently mentioned among the largest subindustries are those in the agriculture, mining and TCPU industries.

INDUSTRIAL GROWTH DURING THE 1980s

The rate of economic growth varied widely by industry between 1980 and 1986 (see Figure II). Expansion of the services and FIRE sectors greatly outpaced that of other industries. Meanwhile, mining and agriculture declined by each measure, decreases that are even more significant when compared to the rapid growth of the other industries.

Measured by personal income, the FIRE sector grew most rapidly (69 percent), followed by services (59 percent), which expanded more than twice as fast as any other industry. These two industries also topped the list based on employment growth: services employment rose 57 percent, slightly more than the 53 percent of finance, insurance and real estate. Only construction employment rose nearly as fast, but this increase was magnified by cyclical factors. The growth rankings were different when measured by GSP. Several industries are closely bunched, with manufacturing at the top, followed by services and trade.

County Industrial Growth

Growth of Arizona's metropolitan areas far surpassed that of rural areas during the 1980s, regardless of economic measure. While real Gross County Product rose more than 20 percent in Maricopa and Pima Counties between 1980 and 1984, only in Pinal County did the growth rate of a rural county exceed 10 percent. Non-agricultural wage and salary employment rose 30 percent or more between 1980 and 1986 in the urban counties, but less than 20 percent in all non-urban counties except Yavapai and Mohave. Though personal income growth between 1980 and 1984 approached 50 percent in the urban counties, the greatest gain meas-

TABLE 1
SIZE RANKING OF NINE MAJOR INDUSTRIES
ARIZONA AND COUNTIES
Based on Employment, Personal Income and Gross Product

	Services	Trade	Government	Manufacturing	FIRE*	Construction	TCPU**	Agriculture	Mining
ARIZONA	1	2	3	4	5	6	7	8	9
Apache	2	5	1	6	7	3	4	8	9
Cochise	3	2	1	5	7	6	4	8	9
Coconino	2	3	1	4	7	6	5	8	9
Gila	5	4	2	1	9	6	7	8	3
Graham	4	2	1	6	8	5	7	3	9
Greenlee	6	4	2	3	9	5	7	8	1
La Paz	1	3	2	8	7	5	6	4	9
Maricopa	1	2	4	3	5	6	7	8	9
Mohave	2	1	4	3	7	6	5	9	8
Navajo	1	6	2	5	9	7	3	8	4
Pima	1	4	2	3	6	5	7	9	8
Pinal	6	5	1	4	9	8	7	3	2
Santa Cruz	4	1	2	3	6	7	5	8	9
Yavapai	3	1	2	4	7	6	5	9	8
Yuma	4	3	1	7	8	5	6	2	9

*Finance, Insurance and Real Estate
**Transportation, Communications and Public Utilities

Source: Center for Business Research, College of Business, Arizona State University

TABLE 2
ARIZONA'S TEN LARGEST INDUSTRIAL SUBSECTORS
Ranked by 1985 Employment

Subsector	Major Industrial Group	Employment	Share
1. State and Local Government	Government	178,385	11.1%
2. Business Services	Services	93,050	5.8
3. Eating and Drinking Places	Trade	92,727	5.8
4. Special Trade Contractors	Construction	83,472	5.2
5. Health Services	Services	82,309	5.1
6. Real Estate	FIRE*	76,501	4.8
7. Wholesale Trade	Trade	67,575	4.2
8. Miscellaneous Retail**	Trade	48,511	3.0
9. Electric and Electronic Equipment	Manufacturing	42,723	2.7
10. Federal Government - Civilian	Government	41,000	2.6

*Finance, Insurance and Real Estate
**Includes retail establishments such as drug stores, liquor stores and used merchandise stores.

Source: Center for Business Research, College of Business, Arizona State University; from data of the U.S. Department of Commerce, Bureau of Economic Analysis.

ured in a non-metropolitan county was 33 percent in Apache and Cochise Counties.

The differing rates of economic growth result from both diverse industrial structures and varying rates of growth, by industry, across counties (see Table 4). The table's rankings by county should be interpreted carefully because of differing industry sizes. For example, though mining was Maricopa County's second-fastest-growing industry on a percentage basis, its share of the county's economic activity remained far less than 1 percent.

Services was the first or second fastest growing industry in 10 counties. FIRE's rank was not particularly high in any county, its expansion occurring primarily in Maricopa County. The other industries' ranks vary widely by county, ranging from first to eighth or ninth in every case.

The pattern of industrial growth most closely reflects the overall state profile in the metropolitan counties and in Yavapai County. The pattern was most different in those counties with substantial agricultural or mining activity: Gila, Graham and Greenlee. For much of rural Arizona, the immediate outlook is bleak. They rely on government and perhaps mining or agriculture, the three slowest growing industries.

COMPONENT INDUSTRIES

The 10 fastest growing subsectors between 1980 and 1985, based on employment and personal income, are shown in Tables 5 and 6. Dominance of the services and FIRE sectors is obvious: components of these major industries occupy six of the top eight positions when measured by employment and all of the top nine ranks as gauged by PI.

Perhaps the clearest single sign of the state economy's direction is the position of the business services sector near the top of both the growth and size listings (Tables 2 and 3). Other large subsectors that grew rapidly include health services, miscellaneous services, and special trade contractors, though the gain in the latter sector is magnified by cyclical factors.

In contrast, several subsectors shrank or grew slowly between 1980 and 1985. The metal mining and farm subsectors experienced declines in personal income. Primary metal manufacturing and food and kindred manufacturing realized only

TABLE 3
ARIZONA'S TEN LARGEST INDUSTRIAL SUBSECTORS
Ranked by 1985 Personal Income

Subsector	Major Industrial Group	Personal Income*	Share
1. State and Local Government	Government	$3,497	11.9%
2. Health Services	Services	1,945	6.6
3. Special Trade Contractors	Construction	1,693	5.8
4. Wholesale Trade	Trade	1,554	5.3
5. Business Services	Services	1,361	4.6
6. Electric and Electronic Equipment	Manufacturing	1,169	4.0
7. Federal Government, Civilian	Government	1,053	3.6
8. Transportation Equipment, Excluding Motor Vehicles	Manufacturing	841	2.9
9. Machinery, Except Electrical	Manufacturing	826	2.8
10. Banking	FIRE**	820	2.8

*In millions of dollars
**Finance, Insurance and Real Estate

Source: Center for Business Research, College of Business, Arizona State University; from data of the U.S. Department of Commerce, Bureau of Economic Analysis.

TABLE 4
1980-85 GROWTH RANKING OF NINE MAJOR INDUSTRIES
ARIZONA AND COUNTIES
Based on Employment, Personal Income and Gross Product

	Services	FIRE*	Manufacturing	Trade	Construction	TCPU**	Government	Agriculture	Mining
ARIZONA	1	2	3	4	5	6	7	8	9
Apache	8	3	1	4	2	6	5	9	7
Cochise	1	8	7	2	6	4	3	5	9
Coconino	2	5	4	1	7	9	3	6	8
Gila	2	9	7	3	8	4	5	1	6
Graham	3	5	7	6	9	1	2	4	8
Greenlee	4	6	7	5	8	9	1	2	3
Maricopa	1	3	5	4	6	7	8	9	2
Mohave	1	5	8	3	6	2	4	7	9
Navajo	1	7	3	4	9	2	6	8	5
Pima	2	8	1	4	5	6	7	3	9
Pinal	6	4	3	5	1	2	8	7	9
Santa Cruz	2	8	4	5	1	3	7	9	6
Yavapai	1	7	2	3	4	6	5	9	8
Yuma/La Paz	2	6	3	4	8	7	5	9	1

*Finance, Insurance and Real Estate
**Transportation, Communications and Public Utilities

Source: Center for Business Research, College of Business, Arizona State University

small gains. Each of these four component industries suffered a decline in employment. Other subindustries in which employment declined include apparel and other textile manufacturing, railroad transportation and electric, gas and sanitary services.

SUMMARY

Services is Arizona's leading industry; trade, government and manufacturing are other large sectors. When the major industrial groupings are subdivided, subsectors of the services and trade industries disproportionately occupy the top rankings. In particular, business services and health services are major industries in Arizona.

In terms of growth during the 1980s, services again tops the list, closely followed by the finance, insurance and real estate sector. Components of these industries hold nearly all of the top ranks in growth listings, with the business services sector at or near the top. Arizona's smallest industries, mining and agriculture, occupy the bottom positions on these lists, actually declining. In addition, the government sector is growing slowly. These conditions have had, and probably will continue to have, negative effects across much of rural Arizona, where these three industries play a key economic role.

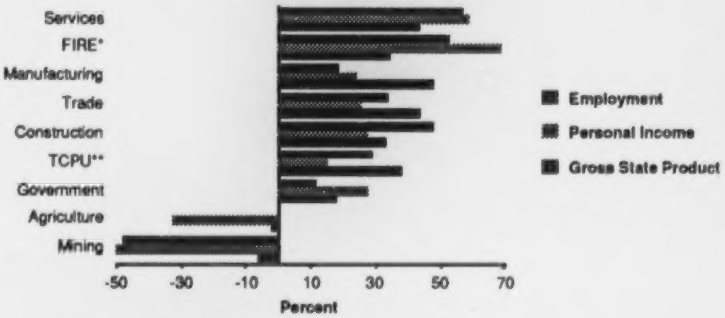
The industrial structures and growth rates are much different in the non-metropolitan counties than in the metropolitan areas, the latter resembling state averages. Such deviations help account for the wide differentials in economic performance during the 1980s between Arizona's rural and urban areas.

– Tom R. Rex
Research Manager

Complete Report Available

This article summarizes the 1987 supplement to the original 1986 report on Arizona's industrial structure. Though the 1987 report updates the most important economic series, it does not repeat much of the analysis, including that of the economic base and multipliers. The supplement features a section on 1980-86 performance that was not included in the original study. Copies of both the 1986 report and the 1987 supplement may be obtained by contacting the Center for Business Research, College of Business, Arizona State University, Tempe, AZ 85287; (602) 965-3961.

FIGURE II
INDUSTRIAL GROWTH IN ARIZONA
Percent Change, 1980-86



*Finance, Insurance and Real Estate
**Transportation, Communications and Public Utilities

Note: Personal income and GSP are measured in real dollars

Source: Arizona Department of Economic Security; U.S. Department of Commerce, Bureau of Economic Analysis; and Center for Business Research, College of Business, Arizona State University.

TABLE 5
ARIZONA'S TEN FASTEST GROWING INDUSTRIAL SUBSECTORS*
Ranked by 1980-85 Percent Change in Employment

		Major Industrial Group	Percent Change
1.	Business Services	Services	92%
2.	Security and Commodity Brokers and Services	FIRE**	82
3.	Special Trade Contractors	Construction	67
4.	Furniture and Fixtures	Manufacturing	63
5.	Real Estate	FIRE**	55
6.	Miscellaneous Services	Services	50
7.	Legal Services	Services	49
8.	Auto Repair, Services and Garages	Services	46
9.	Agricultural Services	Agriculture	45
10.	Miscellaneous Manufacturing Industries	Manufacturing	40

*With at least 1,000 employees
**Finance, Insurance and Real Estate

Source: Center for Business Research, College of Business, Arizona State University; based on data from the U.S. Department of Commerce, Bureau of Economic Analysis.

TABLE 6
ARIZONA'S TEN FASTEST GROWING INDUSTRIAL SUBSECTORS*
Ranked by 1980-85 Percent Change in Personal Income

		Major Industrial Group	Percent Change
1.	Holding & Other Investment Companies	FIRE**	306%
2.	Security and Commodity Brokers and Services	FIRE**	167
3.	Business Services	Services	144
4.	Legal Services	Services	125
5.	Banking	FIRE**	107
6.	Amusement and Recreation Services	Services	106
7.	Health Services	Services	88
8.	Miscellaneous Services	Services	88
9.	Auto Repair, Services and Garages	Services	81
10.	Instruments and Related Products	Manufacturing	80

*With personal income of at least $100 million in 1985
**Finance, Insurance and Real Estate

Source: Center for Business Research, College of Business, Arizona State University; based on data from the U.S. Department of Commerce, Bureau of Economic Analysis.

TABLE 1
1987 AND 1988 ECONOMIC FORECASTS: ARIZONA

	Actual *1986*	Forecast *1987*	Forecast *1988*
Gross State Product			
Millions of 1982 Dollars	44,970	46,780	48,375
Percent Change	4.8	4.1	5.6
Personal Income			
Millions of Current Dollars	43,877	46,840	50,630
Percent Change	7.6	6.8	8.1
Retail Sales			
Millions of Current Dollars	17,187	18,225	19,570
Percent Change	6.3	6.0	7.4
Unemployment Rate			
Percent	6.9	7.6	7.2
Wage and Salary Employment			
Number in Thousands	1,341.4	1,391.8	1,458.7
Percent Change	4.9	3.8	4.8
Population			
Number in Thousands	3,332	3,452	3,572
Percent Change	4.1	3.6	3.5
New Single Family Housing Units Permitted			
Number	34,079	30,500	31,500
Percent Change	2.4	-8.8	3.3
New Multifamily Housing Units Permitted[1]			
Number	27,008	14,700	14,500
Percent Change	-27.2	-45.6	-1.4

[1] Apartment complexes of three or more units

TABLE 2
1987 AND 1988 ECONOMIC FORECASTS: MARICOPA COUNTY

	Actual *1986*	Forecast *1987*	Forecast *1988*
Consumer Price Index			
Percent Change	1.3	4.3	5.4
Retail Sales			
Millions of Current Dollars	11,342	12,050	12,950
Percent Change	4.7	6.2	7.5
Unemployment Rate			
Percent	5.8	6.4	6.1
Wage and Salary Employment			
Number in Thousands	883.5	918.6	965.6
Percent Change	4.9	4.0	5.1
Population			
Number in Thousands	1,902	1,982	2,062
Percent Change	4.9	4.2	4.0
New Single Family Housing Units Permitted			
Number	23,851	22,600	23,300
Percent Change	3.1	-6.2	3.1
New Multifamily Housing Units Permitted[1]			
Number	18,311	11,100	11,000
Percent Change	-32.9	-36.4	-0.9

[1] Apartment complexes of three or more units

Source (Tables 1 and 2): Economic Outlook Center, College of Business, Arizona State University

"AZ Forecast," from page 1

interest rates. On a seasonally adjusted basis, residential building permits during first quarter 1987 were down more than 35 percent from 1986 levels.

While the decline was expected for multifamily housing, single family home construction was slower than anticipated. Assuming that interest rates bottomed out for the current business cycle in March, the forecast is for 30,500 single family housing starts in Arizona during 1987, about 1,500 fewer than predicted in the previous forecast.

Figure I illustrates the steep decline in construction employment that began last summer. During prior business cycles, construction employment was a significant leading indicator of the Arizona economy's short-term growth path.

EMPLOYMENT

Arizona employment statistics for the first four months of 1987 portray a rapidly weakening economy. Construction was not the only sector to experience difficulties. Continuing job losses in manufacturing dimmed hopes for a rebound by the durable goods producers this year. However, some of the state's electronics manufacturers offer promising signs of expansion; this trend may continue if the nation's trade balance responds further to the dollar's fall in exchange value.

Staffing cuts by defense contractors have offset gains recorded by other companies. Anticipated cuts in defense spending suggest that employment growth in Arizona's manufacturing sector will not be as strong as the EOC had hoped. The softening in this sector, combined with the downturn in construction activity, has caused the EOC to adjust employment forecasts downward. Non-agricultural wage and salary employment in Arizona should rise just 3.8 percent during 1987, down from the 4.4 percent growth rate predicted earlier in the year.

In 1988, Arizona's employment situation is likely to improve. The forecast of 4.8 percent growth is comparable to the 4.9 percent gain posted in 1986.

PERSONAL INCOME

Preliminary estimates of 1986 Arizona personal income were released in April by the Bureau of Economic Analysis, U.S. Department of Commerce. The 7.6 percent increase, while small compared to gains during the 1984-1986 period, should not have surprised most analysts.

The income data confirmed other information already available. Employment growth declined substantially during the second half of 1986, with well-paying jobs eliminated in manufacturing and construction; retail sales were anemic relative to expectations; and state revenue collections lagged so far behind projections that a special legislative session was called to cut spending in order to balance the budget.

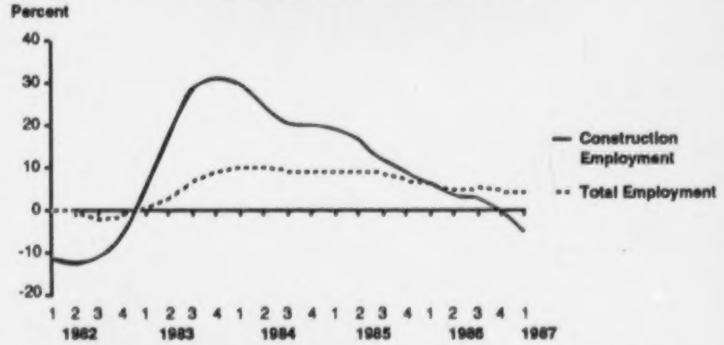
The revised outlook for employment also has contributed to modified predictions for income growth. An increase of 6.8 percent is projected for this year, to be followed by an increase of 8.1 percent in 1988. The expected improvement will result from a relatively sanguine employment situation and higher inflation.

PRICES

If little or no inflation is a good thing for the economy, then it was probably too good to last. The 1986 experience of 1 percent-plus inflation already is a thing of the past. During first quarter 1987, the Metropolitan Phoenix Consumer Price Index rose a seasonally adjusted 2.1 percent, for a compound annual rate of 8.7 percent. The "villain" that brought back inflation was the same entity called "hero" when it contributed to inflation's short-lived demise: gasoline prices.

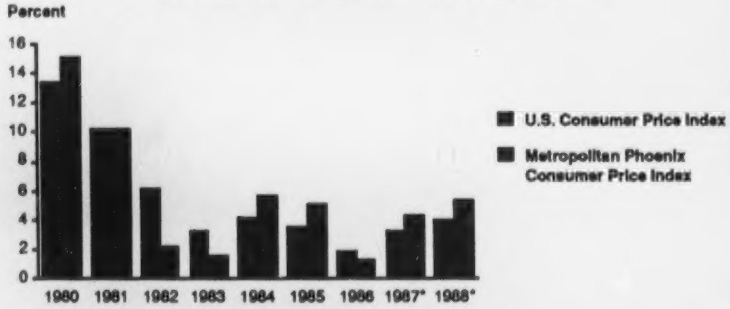
Aside from fuel-related transportation costs, little change from last year was evident in the remaining categories. This pattern is expected to prevail for the duration of the forecast period. As Figure II indicates, the EOC predicts inflation in 1987 and 1988 similar to the 1984-1985 rates. Increases in the Metropolitan Phoenix CPI should average 4.3 percent in 1987 and 5.4 percent in 1988. These forecasts assume that the fuel cost volatility of 1986 and early 1987 is mostly behind us.

FIGURE I
ARIZONA CONSTRUCTION EMPLOYMENT
Percent Change from Previous Year



Source: Arizona Department of Economic Security; and the Economic Outlook Center, College of Business, Arizona State University.

FIGURE II
CONSUMER PRICES
METROPOLITAN PHOENIX AND THE UNITED STATES
Percent Change in Indexes from the Previous Year



*Forecast

Source: Metropolitan Phoenix data compiled by the Center for Business Research, College of Business, Arizona State University, in cosponsorship with Valley National Bank; U.S. data are from the U.S. Department of Labor, Bureau of Labor Statistics.

RISKS TO THE OUTLOOK

The principal risk to the current economic outlook is a national recession, which is not expected to occur before 1989. Conversely, the probability is low that the Arizona economy will experience renewed vigor in the immediate future. Virtually all sectors of the state's construction industry have enough slack to prevent the boom of recent years from resuming. A rapid expansion in manufacturing also is unlikely this year, due to reductions in defense spending, along with a slow-to-develop recovery in electronics.

SUMMARY

The Arizona economy has weakened perceptibly in recent months, as measured by employment, construction activity, the Arizona Index of Leading Economic Indicators, and nearly every other measure. Nevertheless, when the state is evaluated in a regional or national context, the statistical measures still are reasonably strong.

Even so, the evidence is unmistakable: The expansion may not be finished, but the national economy must continue to grow if the Arizona economy is to regain the health it enjoyed as recently as one year ago.

– **Brian Cary**
Economist
Economic Outlook Center

Quarterly National Economic Forecast

Slow Growth and Uncertainty Mar Outlook for '87 and '88

In an expansion phase for 54 months, the U.S. economy is four months shy of the longest peacetime recovery in U.S. business-cycle history, which dates back to 1854. While it is a forgone conclusion that the economy has the vitality to break this record, its path thereafter is marked by uncertainty. The odds are favorable that the economy will languish in a low-growth profile for the next 24 months, but this prognosis is largely dependent on both the skillfulness of the Federal Reserve and the cooperation of foreign countries and investors.

OVERVIEW

In all, little has changed since the last national forecast of the Economic Outlook Center (see the April 1987 *Arizona Business)*. Real GNP is likely to grow 2.4 percent this year and 3.2 percent in 1988. Higher oil prices, though bothersome, do not appear to be a major threat to growth. The U.S. dollar should continue its fall against major foreign currencies, dropping 16 percent in 1987 and 7 percent in 1988, thus heating up the U.S. export climate.

A new development – one that has been wreaking havoc on the bond market – is the renewed concern over inflation as well as the potential for a freefall of the dollar against major foreign currencies. As measured by the consumer price index, inflation rose at a compound annual rate of 6.2 percent during the first quarter of 1987. In addition, the Fed has shifted its monetary policy from accommodative to "snugging" (slightly restrictive), with a concomitant rise in interest rates. Consequently, the major changes in the outlook since April concern those sectors of the economy that are interest-sensitive – namely, consumption and investment spending.

FORECAST BY SECTOR

Consumption

Table 1 shows the contributions to growth in real GNP of the final demand categories from 1986 to 1988. In the halcyon period of 1986, consumers outdid themselves in two dimensions: amassing debt and spending on durable goods such as autos and appliances. Reductions in oil prices and interest rates, in addition to the stimulus of auto incentive programs, helped to generate the year's 4 percent growth in consumption spending. By comparison, the outlook for 1987 appears lethargic. Low-to-modest income growth, coupled with higher 1986 and 1987 tax liabilities from underwithholding, signal a retrenchment in consumer spending. The recent spike in both long and short-term interest rates does not bode well for any surge in borrowing that would support higher spending levels.

The April drop in the index of consumer confidence, compounded by a rise in the "Misery Index" (inflation combined with unemployment) as illustrated in Figure I, give consumers little to celebrate. Households will be inclined to rebuild personal savings and pare down debt in the coming months. The EOC outlook is for meager growth in spending this year (2.2 percent), with the pace accelerating to 3.1 percent in 1988 as consumers feel the impact of tax reform and higher personal income growth.

Investment

For investment spending, the picture turns from bad to worse. In April, the EOC noted several factors contributing to a climate of negative growth in non-residential fixed investment during 1987: a severe overhang of excess capacity in commercial property, tax reform's limitations on sheltering income through limited partnerships, and the lengthening of depreciation periods for investment properties.

Given the recent run-up in mortgage rates, the outlook for residential fixed investment is equally bleak. With non-residential fixed investment expected to decline 0.9 percent and residential fixed investment expected to grow just 0.9 percent, only a buildup in inventories will keep forecasted investment spending from turning negative during 1987. In 1988, the growth in residential fixed investment is likely to turn negative, but spending by busi-

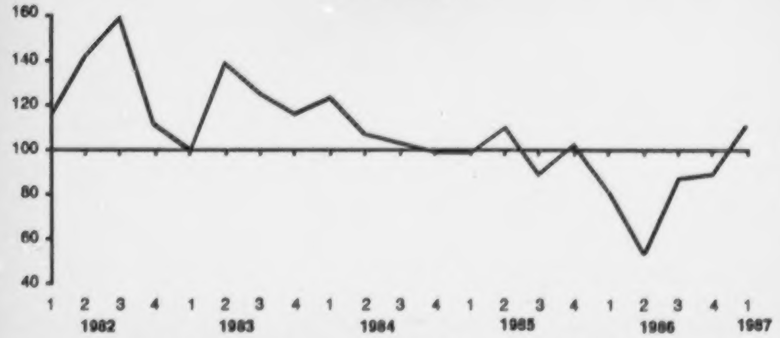
TABLE 1
CONTRIBUTIONS TO GROWTH IN REAL GNP
By Sector, 1986–1988

	Actual*	Forecast*	
	1986	*1987*	*1988*
Real Gross National Product	3,675.0	3,764.5	3,884.6
Less Inventory Change	6.5	15.3	28.3
Equals Final Sales	3,668.5	3,749.3	3,856.3
Components of Final Sales			
Personal Consumption	2,418.7	2,471.0	2,547.9
Non-residential Investment	456.7	452.4	473.8
Residential Investment	194.0	195.8	193.2
Government Purchases	746.8	760.5	764.8
Net Exports	-147.8	-130.6	-123.4
	Percentage Change from Prior Year		
Real Gross National Product	2.5	2.4	3.2
Final Sales	2.6	2.2	2.9
Components of Final Sales			
Personal Consumption	4.1	2.2	3.1
Non-residential Investment	-1.0	-0.9	4.7
Residential Investment	9.4	0.9	-1.3
Government Purchases	3.5	1.8	0.6
Net Exports	-36.6	11.6	5.5

*In billions of 1982 dollars

Source: Actual 1986 data are from the U.S. Department of Commerce, Bureau of Economic Analysis. Projections are by the Economic Outlook Center, College of Business, Arizona State University.

FIGURE I
THE MISERY INDEX*
(1985 = 100)



*Combines the "all items" inflation rate from the U.S. Consumer Price Index and the U.S. unemployment rate for the civilian non-institutional population (both from the U.S. Department of Labor, Bureau of Labor Statistics).

Source: Compiled by the Economic Outlook Center, College of Business, Arizona State University.

ness on investment goods should rebound due to a turnaround in the trade picture.

Public Sector

Because of the size of the federal deficit and its associated financing requirements, federal spending is expected to show little, if any, real growth during 1987 and 1988. The infusion of higher-than-expected tax receipts in April afforded breathing room; however, the recent ambivalence of Japanese investors about absorbing new U.S. government securities at the Treasury's auction will make the size of the federal deficit a critical issue for the next two years – one that will have an impact on the 1988 elections. While it's too soon to call, the odds are improving for passage of major legislation to enhance revenues, i.e., increase taxes. For example, House Speaker Jim Wright's proposal would postpone the reduction in the top marginal income tax rate.

After rising just 0.3 percent in 1987, federal spending is expected to turn negative in 1988. The outlook is somewhat better for spending by state and local governments. With the demise of revenue sharing and other federal funds, they must now step in to provide needed public services, notably in the area of human resources. The state and local government component of final demand is expected to keep the overall growth in government sector spending from turning negative in 1988. For many states, the source of funding for balancing their budgets and supporting greater expenditure levels is the income tax windfall associated with federal tax reform. Overall, the EOC projects growth in state and local spending of 3.2 and 1.6 percent, respectively, in 1987 and 1988.

Foreign Trade

In 1986 the consumer, through prolific borrowing and spending, kept the economy from sliding into recession. Now, however, with the growing reluctance of households to amass additional debt in support of further spending, the capacity of the economy to continue growing is critically tied to developments in foreign trade. Though the dollar has slid against the Japanese yen and European currencies to its pre-appreciation level of 1980, the growth in foreign orders for U.S. goods has been moderate; the volume of U.S. exports grew at an annual rate of 15 percent in 1986. Additionally, only by year-end 1986 did imports begin to flatten. Japanese producers, by taking repeated hits in profit margins, have proven to be tough competitors when it comes to relinquishing hard-won shares in U.S. markets.

For the trade deficit to improve, the U.S. dollar will have to fall further. The EOC outlook calls for the dollar to drop 16 percent in 1987 and 7 percent in 1988. While nominal export balances will continue to be depressed, real dollar trade will improve. In contrast to imports, which will grow only modestly in 1987 and 1988, real exports will increase 8.0 and 5.8 percent, respectively. On balance, net exports, by exerting less of a drag on U.S. growth, should keep the U.S. economy afloat.

MAJOR FORECAST RISKS

A major risk to growth is that anticipated improvement in the real trade balance may not materialize. Global recession could be in the offing if the current protectionist legislation (the Gephardt amendment) is passed, imposing sanctions against countries that refuse to reduce their trade surpluses with the United States by 10 percent per year. This shift in trade policy, equivalent to the Smoot-Hawley Bill of 1930, would evoke retaliation and an all-out trade war with other countries.

An additional risk to the forecast is tied to the Fed's success in maintaining price stability while simultaneously promoting real economic growth. As noted earlier, foreign investors recently showed ambivalence toward absorbing newly issued U.S. Treasury securities. In essence, the decline in the dollar's value vis-a-vis other currencies is associated with a demand by foreign investors for higher interest rates to hold existing debt, as well as to acquire newly-issued U.S. securities. Furthermore, when imports shrink, as they have for the United States, the economy begins to "import" inflation since more dollars are chasing fewer goods.

Both of these developments dictate tightening the money supply, as the Fed recently demonstrated. However, should the dollar decline precipitously in the immediate future, in tandem with a run-up in the inflation rate, the Fed would be faced with a difficult choice between inflation and recession. It is a safe bet that Alan Greenspan will have the same preference as his predecessor Paul Volker: Interest rates would rise sufficiently to choke off inflation. Unfortunately, such an increase would severely curtail U.S. growth – if not plunge the economy into recession.

– Jim Huyghebaert
Senior Economist
Economic Outlook Center

Construction Activity Stays Strong During First Quarter

Arizona construction activity during first quarter 1987, while below the levels of first quarter 1986, continued to be strong. Building permits valued at $1.2 billion (24,041 permits) were issued, in contrast to a $1.4 billion value (27,191 permits) one year earlier. Activity also improved since fourth quarter 1986, when the valuation was $1.1 billion for 21,559 permits. Unlike previous quarters, no single sector dominated the industry, as shown in the tables that accompany this report.

TABLE 1
REPORTING UNITS WITH GREATEST TOTAL VALUE OF BUILDING PERMITS
First Quarter, 1987

Reporting Unit	Value (in millions)
Phoenix	$275.7
Scottsdale	202.8
Mesa	110.7
Unincorporated Pima County	82.2
Unincorporated Maricopa County	79.6
Tucson	75.8
Tempe	54.9
Chandler	51.5
Glendale	45.3
Peoria	34.9
Gilbert	31.7
Unincorporated Yavapai County	12.0

Source: Center for Business Research, College of Business, Arizona State University

Pima and Maricopa Counties together accounted for 88 percent of the state's construction activity. Maricopa County represented 74 percent of the total activity, with 15,377 permits, valued at $896 million. With 14 percent of the total, Pima County recorded 3,585 permits, worth $162 million.

Nearly 90 percent of the total construction activity occurred in the 12 reporting areas listed in Table 1. Most of the areas reported decreased activity from first quarter 1986, including Phoenix ($401 million to $276 million) and Tucson ($124 million to $76 million). Some areas, however, demonstrated increased activity, such as Scottsdale ($137 million to $203 million) and Peoria ($20 million to $35 million).

SECTORAL ACTIVITY

Residential

Even with lower mortgage interest rates, the single family sector in Maricopa County fell from the year-earlier level of 6,057 permits to 5,242 permits for first quarter 1987. The number of permitted homes declined, but the dollar value increased from $399 million to $430 million. This pattern demonstrates the continued strengthening of the move-up market. The only areas within the county to report improved activity over first quarter 1986 were Gilbert (198 to 237 permits) and unincorporated Maricopa County (930 to 1,134 permits).

For the same period, the single family sector within Pima County also improved (1,002 to 1,132 permits). More than 74 percent of the authorized units (838 permits) were for the unincorporated areas of the county, while only 24 percent (267 permits) were for the city of Tucson.

With 1,178 permitted homes, the single family sector continued to decline in the non-metropolitan counties. Leading areas of activity were Lake Havasu City (120 permits), unincorporated Yavapai County (145 permits), and unincorporated Cochise County (75 permits).

Commercial

As expected, the apartment sector in Maricopa County declined from the 4,908 units permitted during first quarter 1986 to only 1,778 units one year later. In the city of Glendale, the number of authorized units fell from 1,316 to only 36. The multifamily sector in Pima County remained largely unchanged from the

TABLE 2
KEY SECTOR CONSTRUCTION ACTIVITY
(First Quarter 1987, Fourth Quarter 1986, and First Quarter 1986)

	SINGLE FAMILY		COMMERCIAL						INDUSTRIAL	
			APARTMENTS[a]		OFFICE BUILDINGS[b]		RETAIL STORES[c]			
	Number of Permits	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*
Maricopa County										
First Quarter 1987	5,242	430,044	104	63,779	70	86,940	216	73,363	47	20,512
Fourth Quarter 1986	4,136	341,547	118	62,243	57	73,099	267	94,308	76	25,407
First Quarter 1986	6,057	399,132	335	135,721	87	81,709	257	69,658	77	50,458
Pima County										
First Quarter 1987	1,132	73,017	48	19,717	17	14,172	27	16,615	6	1,157
Fourth Quarter 1986	758	53,257	64	59,638	18	5,520	24	6,055	8	828
First Quarter 1986	1,002	64,256	58	20,585	39	40,971	29	13,405	8	1,086
Rest of Arizona										
First Quarter 1987	1,178	69,650	13	4,497	19	1,510	69	11,931	23	3,971
Fourth Quarter 1986	1,387	81,209	10	4,926	33	2,604	57	9,945	37	6,970
First Quarter 1986	1,355	68,748	54	17,673	35	2,370	62	6,835	26	2,504
Arizona Total										
First Quarter 1987	7,552	572,711	165	87,993	106	102,622	312	101,909	76	25,640
Fourth Quarter 1986	6,281	476,013	192	126,807	108	81,223	348	110,308	121	33,205
First Quarter 1986	8,414	532,136	447	173,979	161	125,050	348	89,898	111	54,048

[a] Five or more housing units

[b] Office, bank, medical and professional buildings

[c] Shopping centers and other mercantile buildings

Source: Center for Business Research, College of Business, Arizona State University

first quarter 1986 activity level, with 822 units permitted, but was down appreciably from the 2,541 units permitted in the last quarter of 1986. Only 186 units were authorized in the rest of the state, including 48 units in unincorporated Yuma County and 31 units in Safford.

Contrary to expectations, the office building sector in Maricopa County continued to be healthy, recording 70 permits, valued at $87 million. This performance was the strongest since the $91 million (124 permits) of third quarter 1985. The primary areas of development were Phoenix (36 permits at $56 million), Scottsdale (5 permits at $11 million), and Mesa (7 permits at $10 million). In Pima County 17 permits, valued at $14 million, were issued during first quarter 1987, well above the $5-million valuation (18 permits) of fourth quarter 1986, but well below the $41 million (39 permits) of one year earlier.

Although retail construction activity decreased from the fourth quarter ($94 milllion to $73 million), it was better than the $70 million recorded in the initial quarter of last year. Scottsdale led the activity, with 9 permits ($20 million), one of which was valued at $9 million. Retail development in Pima County improved significantly, from $6 million (24 permits) in the fourth quarter to the first quarter level of $17 million (27 permits). In the non-metropolitan counties, retail activity has steadily increased from the $7 million (66 permits) of first quarter 1986 to 69 permits, worth $12 million, one year later. Areas of retail development included Sierra Vista ($1.3 million), Payson ($2.5 million), and Prescott Valley ($4.2 million).

During first quarter 1986, the hotel/motel sector recorded 22 permits (4,000 rooms), valued at $129 million. For first quarter 1987, only 4 permits ($36 million) were issued, with 2 of the permits in Scottsdale ($33 million).

Industrial

Maricopa County's industrial sector reported only 47 permits ($31 million), compared to 77 permits ($50 million) one year earlier. Leading areas of industrial development were Phoenix (29 permits at $11 million) and Mesa (4 permits at $6 million). Chandler ($2 million) and Gilbert ($4 million) also reported good activity, each issuing one industrial permit.

Industrial development in Pima County continued to be valued at approximately $1 million, with all activity in the unincorporated areas. Mohave County reported 8 permits, with a total value of $3 million, accounting for the majority of the $4 million (23 permits) in industrial activity recorded for the non-metropolitan counties.

Other

This sector encompasses diverse construction activity such as schools, churches, and health care facilities. Building of educational facilities continued at a strong pace, with new projects valued at $21 million. Nearly $20 million of these projects were within Maricopa County, including Mesa ($7 million), Phoenix ($5 million), and Tempe ($4 million). Only 5 permits were issued for health care facilities, but they were valued at $11 million. These facilities will be built in the cities of Phoenix (4 permits at $7 million) and Tucson (1 permit for $4 million).

LOOKING AHEAD

Much like first quarter 1986, construction activity started 1987 at a

TABLE 3
ARIZONA HOUSING UNITS AUTHORIZED
First Quarter 1987

	One Family	Mobile Homes	Duplex	3-4 Family	5 or More	Total
APACHE COUNTY	12	12	0	0	0	24
Percent Change, Previous Year	0	80	-	-	-	20
Percent Change, Previous Qtr.	50	-14	-	-	-	4
COCHISE COUNTY	116	66	0	0	[illegible]	182
Percent Change, Previous Year	-17	-43	-	-	[illegible]	-71
Percent Change, Previous Qtr.	23	21	-	-	-61	-19
COCONINO COUNTY	126	58	0	0	0	184
Percent Change, Previous Year	-14	-11	-	-	-	-40
Percent Change, Previous Qtr.	-6	-41	-	-	-	-26
GILA COUNTY	69	48	0	0	0	117
Percent Change, Previous Year	33	-13	-	-	-	8
Percent Change, Previous Qtr.	-18	-84	-	-	-	-54
GRAHAM COUNTY	14	41	0	5	31	[illegible]
Percent Change, Previous Year	8	-7	-	-	-	[illegible]
Percent Change, Previous Qtr.	27	86	-	0	-	147
GREENLEE COUNTY	0	0	0	0	0	0
Percent Change, Previous Year	-	-	-	-	-	-
Percent Change, Previous Qtr.	-	-	-	-	-	-
LA PAZ COUNTY	9	58	0	0	0	67
Percent Change, Previous Year	-40	74	-	-	-	-15
Percent Change, Previous Qtr.	-	-	-	-	-	-
MARICOPA COUNTY	5,542	467	40	96	1,770	7,915
Percent Change, Previous Year	-13	3	[illegible]	-75	-64	-38
Percent Change, Previous Qtr.	27	2	[illegible]	14	-5	16
MOHAVE COUNTY	287	306	0	3	31	627
Percent Change, Previous Year	14	-14	-	-40	-	1
Percent Change, Previous Qtr.	14	-6	-	-	-64	-6
NAVAJO COUNTY	47	21	0	0	8	76
Percent Change, Previous Year	-31	-18	-	-	-	-18
Percent Change, Previous Qtr.	31	5	-	-	0	13
PIMA COUNTY	1,152	166	40	16	802	2,176
Percent Change, Previous Year	13	-67	18	44	-4	-10
Percent Change, Previous Qtr.	45	-55	100	900	-46	-30
PINAL COUNTY	95	106	0	12	0	213
Percent Change, Previous Year	-23	-60	-	20	-	-55
Percent Change, Previous Qtr.	-31	-46	-	-25	-	-42
SANTA CRUZ COUNTY	36	3	0	7	0	46
Percent Change, Previous Year	16	-60	-	-	-	-57
Percent Change, Previous Qtr.	0	0	-	75	-	7
YAVAPAI COUNTY	258	134	14	36	90	532
Percent Change, Previous Year	-35	-38	17	-12	-30	-35
Percent Change, Previous Qtr.	-44	-1	170	80	110	-35
YUMA COUNTY	110	146	0	0	48	304
Percent Change, Previous Year	-11	-16	-	-	-64	-51
Percent Change, Previous Qtr.	-1	-8	-	-	-	15
TOTAL, ARIZONA	7,580	1,601	94	178	[illegible]	[illegible]
Percent Change, Previous Year	-10	-31	-41	-65	-58	-32
Percent Change, Previous Qtr.	28	-6	31	8	-40	-6

Note: A dash indicates that a percent change could not be calculated because at least one period had no activity.

Source: Center for Business Research, College of Business, Arizona State University high level, but concern exists about whether the pace can be maintained. Market conditions are not especially positive for any single sector, and concerns are mounting about the economy. Most people expected the commercial sectors to report somewhat lower levels of activity during the year but that the single family sector would sustain the industry. However, the recent and sudden increase in mortgage interest rates (9 to 10.5 percent) creates a serious obstacle to the single family sector's true improvement during the year and to its capacity to help sustain construction activity at the current pace.

Given the concerns about 1988, one can expect development activity to follow fairly cautious patterns, with most of the activity remaining in the metropolitan counties. The industrial and retail sectors should be able to sustain their current levels, given the fairly balanced market environment. The apartment sector will not improve greatly until the vacancy rates decline enough to allow owners to raise rents to levels that justify new apartment development. The main force that could drive the industry this year is the commencement of major projects, especially in the office and retail sectors. These projects will not open for another year, at which time the market is expected to be much improved.

The current year should be a healthy one for the construction industry. However, because building activity has been so strong for the last several years, 1987 will appear weak by comparison. Basically, construction activity will slow during the year as developers examine the current and potential strength and demands of the market.

– Jay Q. Butler

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TABLE 4
ARIZONA BUILDING PERMITS
First Quarter 1987

	Residential*		Commercial		Industrial		Other		Total	
	Number of Permits	Dollar Value (000)	Number of Permits	Dollar Value (000)	Number of Permits	Dollar Value (000)	Number of Permits	Dollar Value (000)	Number of Permits	Dollar Value (000)
APACHE COUNTY	27	775	1	250	0	0	4	15	32	1,044
Percent Change, Previous Year	4	-6	-67	685	-	-	-33	-60	-6	-50
Percent Change, Previous Qtr.	0	66	0	88	-	-	-60	-60	-16	40
COCHISE COUNTY	294	7,312	22	1,588	3	430	160	1,224	640	11,084
Percent Change, Previous Year	-20	-36	-85	-70	-40	-60	7	-40	-16	-10
Percent Change, Previous Qtr.	12	-21	22	-10	50	2,200	11	44	12	-18
COCONINO COUNTY	201	10,888	26	1,664	1	21	67	1,240	296	13,881
Percent Change, Previous Year	-16	7	56	-41	-60	-91	-2	28	-6	-3
Percent Change, Previous Qtr.	-38	-13	95	-49	-60	-99	-34	-68	-30	-66
GILA COUNTY	209	5,220	28	3,012	3	61	43	119	295	8,515
Percent Change, Previous Year	22	39	313	245	50	76	43	-44	25	80
Percent Change, Previous Qtr.	-16	-6	250	197	-	-	16	-45	-4	12
GRAHAM COUNTY	108	1,547	12	1,140	1	65	6	16	126	2,766
Percent Change, Previous Year	38	6	140	6,641	-	-	-42	-	13	-42
Percent Change, Previous Qtr.	57	16	80	467	0	1,067	-54	-63	25	54
GREENLEE COUNTY	1	0	0	0	0	0	0	0	1	0
Percent Change, Previous Year	-80	-	-	-	-	-	-	-	-80	-
Percent Change, Previous Qtr.	0	-	-	-	-	-	-	-	-83	-
LA PAZ COUNTY	109	1,536	12	488	0	0	48	130	164	2,128
Percent Change, Previous Year	17	-29	500	384	-	-	-6	-61	15	-16
Percent Change, Previous Qtr.	1,813	3,608	-	-	-	-	250	210	922	3,026
MARICOPA COUNTY	8,462	461,404	595	284,760	47	88,512	6,273	123,487	15,377	866,253
Percent Change, Previous Year	-2	7	-37	-40	-29	-40	-18	-23	-10	-14
Percent Change, Previous Qtr.	28	25	-10	0	-36	25	18	13	23	14
MOHAVE COUNTY	982	23,167	42	2,530	8	2,702	281	2,408	1,320	30,030
Percent Change, Previous Year	-6	76	62	70	167	250	-40	24	-14	38
Percent Change, Previous Qtr.	-1	5	65	-40	100	584	-3	111	0	3
NAVAJO COUNTY	116	3,465	11	888	0	0	14	105	141	4,471
Percent Change, Previous Year	-34	-4	57	170	-	-	-71	-73	-40	0
Percent Change, Previous Qtr.	50	27	22	-5	-	-	-75	-40	-6	11
PIMA COUNTY	1,880	70,401	103	81,709	6	1,187	1,884	28,287	3,886	181,881
Percent Change, Previous Year	-42	13	-34	-62	-38	0	-6	-17	-16	-28
Percent Change, Previous Qtr.	20	27	-6	-48	-38	40	-2	-38	8	-6
PINAL COUNTY	397	8,460	35	1,108	1	300	180	885	545	10,372
Percent Change, Previous Year	-28	-7	75	-48	0	-65	-35	-42	-48	-30
Percent Change, Previous Qtr.	-61	-64	82	-48	-91	-88	-67	-68	-41	-20
SANTA CRUZ COUNTY	41	1,880	8	270	0	0	3	80	68	2,228
Percent Change, Previous Year	-61	92	800	27,500	-	-	0	-29	-45	46
Percent Change, Previous Qtr.	-5	17	800	310	-	-	-60	-32	0	27
YAVAPAI COUNTY	580	10,288	21	8,189	3	179	204	2,028	811	20,784
Percent Change, Previous Year	-22	-13	-2	68	-	-	-4	-12	-17	3
Percent Change, Previous Qtr.	-28	-43	-7	62	-40	-76	-16	-47	-48	-34
YUMA COUNTY	349	10,712	16	1,661	3	115	286	1,461	654	14,316
Percent Change, Previous Year	-6	-11	-10	-62	50	-44	27	-27	4	-43
Percent Change, Previous Qtr.	-4	-7	-6	20	-40	-76	8	-47	-1	-14
TOTAL, ARIZONA	18,846	664,167	866	380,844	76	26,840	9,139	169,256	29,041	1,166,330
Percent Change, Previous Year	-6	7	-36	-46	-62	-34	-14	-22	-12	-16
Percent Change, Previous Qtr.	17	16	-1	-4	-37	7	7	-13	12	0

*Includes mobile homes

Note: A dash indicates that a percent change could not be calculated because at least one period had no activity.

Source: Center for Business Research, College of Business, Arizona State University

Purchasing Indicators Continue Climb in May; Inflation Worsens

The Arizona economy continued its upward course in May, with all indicators positive for the fifth consecutive month. May was almost a carbon copy of April in its strong performance. New orders received from customers, production, and employment each registered a healthy increase. Inventory building continued, and lead times grew longer. Inflation worsened.

The economy has come on strong in the first part of 1987, and the robust expansion should continue during the latter half of the year. The trade deficit finally shows signs that the lower dollar value is beginning to bite imports and expand exports. New order receipts, production, and employment should enjoy further increases over the balance of the year. Lead times will increase, and spot shortages will begin to appear. The only real threat to the current expansion is a resumption of unacceptably high inflation; signs of that now are becoming evident.

Table 1 presents the results of the May survey of Arizona purchasing managers. Analysis of these results follows.

PRICES

Prices paid for major purchased items went up in May at the same relatively high rate recorded in April. The highest price increase rates in three years (since summer 1984) were recorded in the last two months. All indicators now are flashing a warning that inflation will be a problem over the balance of the year.

DELIVERY TIME

Delivery time on shipments from vendors continued to stretch, at a rate only slightly smaller than in the previous month. Spot shortages now are beginning to appear, as the economic tempo picks up and vendor operating rates increase.

INVENTORY LEVELS

Inventory levels of purchased materials rose again, for the fifth consecutive month, and at the same increase rate as in April. These inventory additions are contributing to the upward economic momentum.

NEW ORDERS

New orders received by Arizona firms increased again, also. New order bookings have been strong so far this year; each month has registered a higher growth rate than any month during the last half of 1986. This strong performance will translate into further production and employment hikes over the balance of 1987.

PRODUCTION

Production registered a strong jump in May and advanced at a rate that has remained consistent over the past four months. These increases are being fueled by higher new order bookings.

EMPLOYMENT

Employment gained for the fifth month in a row, showing good strength so far this year. This indicator performed sluggishly during the second half of 1986.

PURCHASES

Purchases of materials and supplies accelerated again in May, as needed to meet higher operating rates.

– Harold Fearon

Dr. Fearon is the National Association of Purchasing Management Professor in the ASU College of Business.

Arizona Purchasing Survey

Now in its 25th year of monthly reporting, Dr. Harold Fearon's survey of Arizona business conditions utilizes data from a questionnaire sent to members of the purchasing management associations of Arizona and southern Arizona. It asks them to indicate the direction of activity - higher, unchanged, or lower - of seven key measures of economic activity in the month just ended. These purchasing managers deal daily with supply, demand, and price factors in the marketplace; their aggregate readings have accurately charted the state's economic course for two decades, providing timely data on turning points.

TABLE 1
MAY PURCHASING SURVEY

	Percent of Purchasing Managers Indicating Each Response (May compared to April)		
Key Indicators	*Higher*	*Same*	*Lower*
Prices paid for major commodities	36	60	4
Delivery time from vendors	26	65	9
Purchased materials inventory level	34	43	23
New orders received	44	36	20
Production	41	45	14
Employment	28	59	13
Purchases	47	35	18

Source: Purchasing Management Association of Arizona and the Purchasing Management Association of Southern Arizona.

Glendale Tracks Growth with Gross City Product

Although the economy of the metropolitan Phoenix area is recognized as one of the more vigorous in the nation, the task of actually recording and analyzing its economic growth is made difficult by the absence of economic indicators at the city level. The most frequently cited growth indicator, population, measures neither production nor dollars. Further, population statistics tend to lose reliability between censuses. Personal income, useful for recording economic performance at the state level, is not available for cities.

Responding to the need for a dollar-denominated indicator of economic growth for cities, analysts from the Center for Business Research and the city of Glendale, Arizona (adjacent to Phoenix on the northwest side), developed a measure of Glendale Gross City Product. Gross City Product (GCP) is analogous to Gross State Product (GSP) for Arizona or Gross National Product (GNP) for the United States. GCP is an estimate of the market value of final goods and services produced within the city limits of Glendale – the "value added" to the Arizona economy by Glendale economic activity.

GCP is superior to other economic indicators at the city level, such as building permits or retail sales, because it measures economic output across all sectors of the economy. In addition, it represents the returns to all factors of production. Thus, GCP includes not only labor income but also interest income, profits, and imputed rents.

CALCULATING GCP

In brief, the methodology for computing the Glendale GCP is based on an employment-weighted share of the Arizona GSP. While GSP data are available quarterly from the Center for Business Research, cities wishing to construct their own GCP measure must develop a reliable procedure for estimating city employment.

Glendale estimates employment by using sampling methods to supplement figures supplied by the Labor Market Information Section of the Arizona Department of Economic Security. Employment estimates from the Maricopa Association of Governments were used to update the original employment series.

RECORDING GROWTH

The Glendale GCP series begins with the 1983 values (see Table 1). Arizona GSP was $37.8 billion in 1983, and Glendale GCP was $716.1 million, about 1.9 percent of the state total. By the end of 1986, Arizona GSP had increased 36 percent, to more than $51 billion. Meanwhile, Glendale GCP had increased 70 percent, accounting for 2.4 percent of total state product.

The Center for Business Research has developed an Arizona-specific price index for deflating GSP. Inflation-adjusted or "real" growth figures for Arizona and Glendale can be compared to those of the nation as a whole (see Figure I).

National growth became sluggish after 1984, the year GNP grew 6.5 percent. In 1985 and 1986, national growth sank below its long-term trend of approximately 3 percent. Similarly, Arizona growth dipped below the long-term trend of real GSP in 1986, accelerating only 4.8 percent. Glendale growth weakened slightly in 1985, falling to 10.7 percent, but surged in 1986 to 18.7 percent. Evidence from its GCP places Glendale among the faster growing communities not only in Arizona but in the nation.

CONCLUSIONS

In spite of widespread interest in economic development, few cities in the nation use a comprehensive measure of economic performance

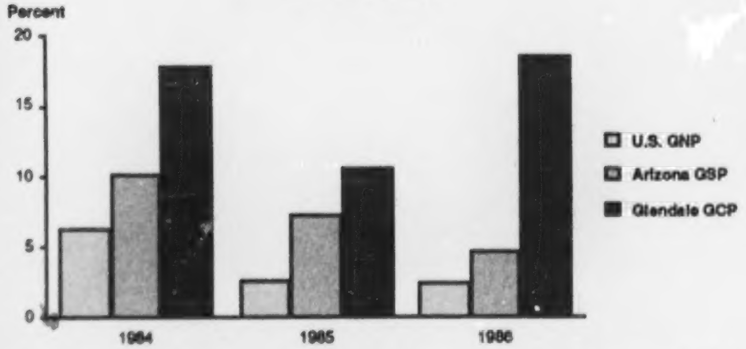
See "GCP," page 15

TABLE 1
GROSS PRODUCT, BY YEAR

Gross Product *(in millions)*	1983	1984	1985	1986
United States	$3,277,700	$3,492,000	$3,998,500	$4,199,100
Arizona	37,821	43,156	47,873	51,372
Glendale	716.1	871.2	999.8	1,215.9
Gross Product *(in millions of 1982 dollars)*				
United States	$3,277,700	$3,492,000	$3,570,000	$3,666,800
Arizona	37,251	39,966	42,901	44,970
Glendale	684.5	807.0	893.0	1,060.3

Source: U.S. Department of Commerce (GNP data); Center for Business Research (GSP data); and city of Glendale (GCP data).

FIGURE I
ANNUAL GROWTH OF GROSS PRODUCT
(1982 Dollars)



Source: U.S. Department of Commerce (GNP data); Center for Business Research (GSP data); and city of Glendale (GCP data).

Arizona Leading Index Continues Slide in April

The Arizona Index of Leading Economic Indicators declined in April for the third consecutive month, to 109.9, from a revised 110.1 in March (see Figure I).

Five of the 10 index components dipped in April. Seasonally adjusted components derived from a survey of Arizona purchasing managers were mixed. Purchased materials inventory levels, new orders, and production all recorded decreases. Delivery time increased, and employment was unchanged.

After declining for two months, the national money supply (M2) grew slightly, and sensitive materials prices registered no change. The third consecutive monthly decrease in the Arizona average workweek – to exactly 40 hours – was favorably offset by a reduction in the number of first-time unemployment insurance claims. Residential building permits declined for the second month in a row.

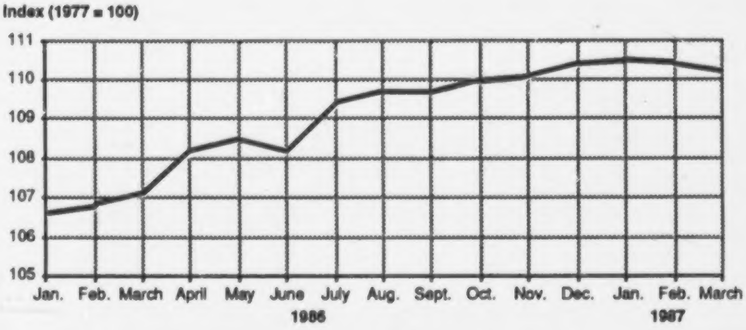
OUTLOOK

The leading index continues to signal sluggish growth for the remainder of 1987, having peaked in January at 110.5. Since then, it has taken a gradual but clearly downward course, approximately negating each gain of fourth quarter 1986.

Although three consecutive months of decline warrant attention from those who follow the economy, the monthly decreases have been much smaller than those that normally precede a recession. Nevertheless, it is worth noting that at the January index peak, the calculation formula for the probability of a recession yielded a value of 3 percent. As of April, the probability had increased to 13 percent.

– **Lee R. McPheters**, *Director*
Economic Outlook Center

FIGURE I
ARIZONA INDEX OF LEADING ECONOMIC INDICATORS



Source: Economic Outlook Center, College of Business, Arizona State University

TABLE 1
NET CONTRIBUTION OF INDIVIDUAL COMPONENTS TO THE ARIZONA INDEX OF LEADING ECONOMIC INDICATORS

	Net Contribution⁺			
	Jan.	*Feb.*	*Mar.*	*Apr.*
Delivery Time*	-.10	.08	.04	.01
Inventory Levels*	.03	-.01	.10	-.08
New Orders*	.09	-.03	.07	-.05
Production*	-.01	.00	.06	-.04
Employment*	.10	.05	.01	.00
Residential Building Permits	-.19	.25	-.05	-.07
Unemployment Insurance Claims	.20	.01	-.13	.09
Average Workweek, Manufacturing	.09	-.07	-.07	-.09
Money Supply	.06	-.20	-.13	.02
Change in Sensitive Materials Prices	-.16	-.19	-.11	.00
OVERALL INDEX CHANGE (%)	.1	-.1	-.3	-.2

⁺The net contribution of each component is calculated by multiplying the monthly percent change in its index by its relative importance.

*Based on indicators from the purchasing management associations of Arizona and southern Arizona.

Source: Economic Outlook Center, College of Business, Arizona State University

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"GCP," from page 14

such as Gross City Product. Instead, they rely on proxy measures, including population estimates and building permits, to track economic growth. The GCP indicator developed for Glendale, Arizona, has proven valuable in preparing the materials requested by financial institutions in connection with bond issues and by site location departments of industrial firms. GCP is an alternative way to record growth that allows ready comparison with activity on the national and state levels.

– **Lee R. McPheters**
– **Larry K. Stephenson**

Dr. McPheters is director of the Economic Outlook Center in the ASU College of Business. Larry Stephenson is Chief Strategic Planner for the city of Glendale.

Two reports are available from the city of Glendale, Arizona, on its Gross City Product. The initial study prepared by the Center for Business Research and city of Glendale staff members, entitled *Glendale Gross City Product and Main Economic Indicators* as well as *Glendale Gross City Product: 1986 Update* may be obtained from the Strategic Planning Department, City of Glendale, 5859 West Glendale Avenue, Glendale, Arizona, 85301; (602) 435-4212.

ARIZONA ECONOMIC INDICATORS

	Month or Quarter	Value	Percent Change from Previous Period	Percent Change from Year Ago	Year-to-Date Value	Year-to-Date Percent Change from Year Ago
GROSS STATE PRODUCT (In Billions of Dollars, at Annual Rate)						
Arizona - Current Dollars	4th Qtr.	51.846	0.4	5.5	NA	NA
Arizona - 1982 Dollars	4th Qtr.	44.902	-0.4	3.1	NA	NA
CONSUMER PRICE INDEX (1977 = 100)						
Metropolitan Phoenix	1st Qtr.	198.0	2.3	3.3	NA	NA
INDEX OF LEADING ECONOMIC INDICATORS (1977 = 100)						
Arizona	April	109.9	-0.2	1.6	NA	NA
BUILDING PERMITS (Total Dollar Value in Thousands)						
Maricopa County	April	406,920	24	6	1,303,283	-8
Pima County	April	60,148	-21	-30	221,749	-26
Balance of State	April	51,058	6	-14	183,020	-12
Arizona	April	518,126	14	-2	1,708,052	-12
TOTAL HOUSING UNITS AUTHORIZED						
Maricopa County	April	2,371	-5	-55	9,984	-42
Pima County	April	634	-33	-48	2,813	-22
Balance of State	April	772	-3	-21	3,216	-32
Arizona	April	3,777	-11	-50	16,013	-37
HOME SALES						
Maricopa County - Number	May	5,160	4	24	24,400	11
Maricopa County - Median Price	May	79,500	-0.2	3.8	78,825	4.1
HOUSING AFFORDABILITY INDEXES						
Metropolitan Phoenix - New Homes	1st Qtr.	102	4.1	12.1	NA	NA
Metropolitan Phoenix - Resale Homes	1st Qtr.	122	7.0	14.0	NA	NA
MORTGAGE INTEREST RATES (Conventional, 30-year, Fixed-rate)						
Maricopa County	May	10.5	5.0	5.0	NA	NA
POPULATION ESTIMATES (In Thousands)						
Maricopa County	1st Qtr.	1,961	1.0	4.2	NA	NA
Arizona	1st Qtr.	3,422	0.9	3.6	NA	NA
ELECTRICAL POWER SALES (In Millions of Kilowatt Hours)						
Arizona	April	2,785	-8.1	3.7	11,562	10.7

NA = Not Applicable

Source: Center for Business Research, College of Business, Arizona State University

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Survey of Readers: Urban Growth

Businesses Enjoy Benefits; Individuals, Society Pay Costs

Urban growth and greater city size produce a net benefit for most metropolitan Phoenix businesses, but a slight net cost for the area's individual residents and for society at large. This result from an *Arizona Business* reader survey confirms generally accepted conclusions on urban growth and increasing city sizes.

The divergence of private and social benefits/costs often leads to continued growth of a city, beyond the size desired by a majority of its residents. Not surprisingly, then, growth of the Phoenix metropolitan area has become a topic of increasing public concern and media attention.

Because the issues surrounding urban growth are complex and subject to considerable disagreement, the Center for Business Research undertook a study to provide factual information. The study emphasized the benefits and costs of growth and greater size to various segments of society. This article reports on the study's two major parts: a literature review and the survey of *Arizona Business* readers.

COST-BENEFIT ANALYSIS

Performing a classical cost-benefit analysis of urban growth is virtually impossible. Varying benefits and costs accrue to each of three major groups: society as a whole, individuals/households/families, and businesses. Many of the costs and benefits are not quantitatively measurable. Even if all of the issues could be quantified, however, the cost-benefit relationship would differ for each of the three groups and by individuals or businesses within the groups.

See "Survey," page 2

In This Issue

6 Need for More Urban Areas
8 Second Qtr. Valley Inflation
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11 AZ Leading Index, May
12 AZ Economic Indicators

1984-85 Migration Patterns Show Little Change

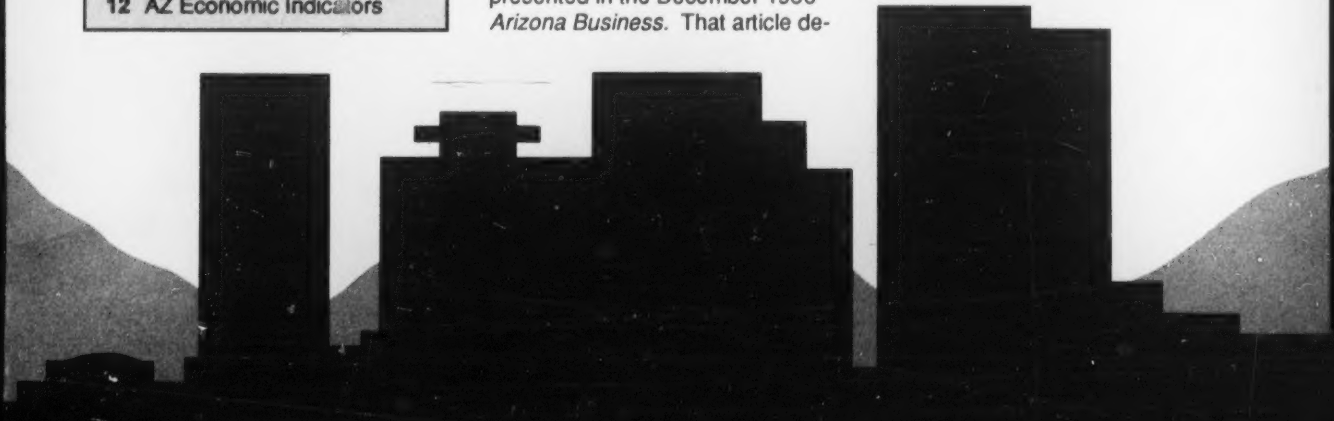
Though the number of people moving from one state to another throughout the United States decreased 3 percent during 1984-85 (the last year for which data are available from the Internal Revenue Service), migration to Arizona increased. Coupled with a decline in out-migration, Arizona's net in-migration rose substantially.

This article updates information presented in the December 1986 *Arizona Business*. That article describes the IRS data and defines terminology used in this update.

NATIONAL MIGRATION PATTERNS

Few states shared Arizona's rising levels of in-migration between 1983-84 and 1984-85; Georgia was the most notable exception. In contrast,

See "Migration," page 7



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"Survey," from page 1

Because the issues cannot be quantified, personal perspective plays an important role in weighing the advantages and disadvantages of growth. Thus, determination of a generally accepted, scientifically defensible, optimal city size or growth rate is impossible.

Though the concepts of urban size and growth rate are not completely interchangeable, the costs and benefits of each are highly related, considered together in Table 1. These lists derive primarily from the literature search.

Costs

Many of the costs of urban growth/increasing city size, such as environmental problems, are borne by the public sector – by society at large. These costs impact individuals only indirectly and businesses hardly at all. Further, many of the problems, such as air pollution, are not quantifiable, making their resolution a slow process. Only when society begins to perceive them as extreme, does it actively work toward solutions. Such was the case with traffic congestion in the Phoenix area.

Some of the costs to individuals – those classified as "psycho-social," for example – are vague and subjective. Others, such as higher living costs, are offset by benefits, such as higher incomes. Thus, many of the costs to individuals are in the form of societal problems.

Many of the costs to businesses are negated by stronger benefits. Thus, greater competition may be offset by increased opportunity, and higher costs and taxes may be neutralized by higher profits.

Benefits

Private firms gain many benefits from urban growth, especially in the form of increased opportunity for new customers and higher profits. Further, many of the benefits can be directly measured, even in economic terms.

In particular, the principal beneficiaries of increasing city size and urban growth are those who possess monopoly advantage in the marketplace. Those who own fixed assets, such as land, receive a disproportionately large jump in value from the greater demand that accompanies urban growth. In addition, individuals who own enterprises for which efficiency rises with size or who hold important non-duplicative positions, such as key executives or bureaucrats, are essentially isolated from increased competition and thereby prosper from urban growth.

To individuals, many of the benefits not offset by costs diminish as growth continues. For example, while choices of housing, shopping and entertainment widen as a community grows from a small town into

TABLE 1
BENEFITS AND COSTS OF URBAN GROWTH AND INCREASED SIZE

Benefits	**Costs**
To Businesses	
Improved market potential – more customers – higher profits	Increased competition
Better availability of labor	Higher costs, such as land, labor and utilities
Increased availability of business services, including banking and capital	Higher taxes
Improved productivity and efficiency	Greater travel time
To Individuals	
Broader employment opportunities	Higher taxes
Higher incomes	Increased cost of living, especially higher housing prices
Increased cultural/recreational opportunities	Psycho-social – lifestyle changes – deterioration of mental and physical health
Greater selection of goods and services	
Wider choice of housing	
To Society at Large	
Improvements to social infrastructure – more and better public services such as medical care and education – economies of scale for urban services	Traffic congestion and accidents
Healthier economy, including a stable, diversified structure	Air pollution
Broadened tax base	Water problems: quality and quantity
Psychological benefits from increased exposure and sophistication	Other environmental damage – damage/destruction of flora and fauna – depletion of resources – waste disposal – light, sight, noise pollution
Increased rate of innovation and inventions	Higher crime rate
Lower incidence of poverty	Urban sprawl and congestion
	Strain on public facilities; increased government size – greater demand for social services – more social problems, such as homeless – higher costs of government

Source: Center for Business Research, College of Business, Arizona State University

an urban area, a threshold frequently exists, beyond which additional benefits are minimal. A professional football team is a good example. At some point, the population of an area can support a team, with the benefit realized by individuals and by society at large. Further growth does not enhance this benefit, however. Only the business running the franchise may gain from further population gains, by increasing the likelihood of selling out the stadium at higher ticket prices.

With two million residents, the Phoenix metropolitan area already has passed the threshold for many benefits. That some cultural activities, for example, are not available may reflect a lack of sophistication more than a deficiency in size.

To society as a whole, some of the benefits of growth, such as improvements to the infrastructure, are counterbalanced by costs, such as higher taxes and the higher cost of public services.

Net Effect

When viewed purely in terms of economic productivity/efficiency, larger urban size probably brings more efficiency, making even the nation's largest urban areas less than an optimal size. However, many of the external economies (benefits) of large cities accrue to businesses, and most businesses enjoy a substantial net benefit from urban growth.

Though the lack of measurability of many benefits and costs makes determination of the net effect to individuals and to society difficult, most studies indicate that, at best, the net effect is nil. If problems such as crime, traffic congestion, environmental damage, and strain on public facilities become great, the net effect of urban growth on individuals and society will be negative.

In the Phoenix area, a bias toward growth probably will persist because of the net benefits most businesses realize. If private firms had to pay for their externalities (the costs they impose on society), their productivity might not be as great – nor their desire to locate in large cities.

Outlook

The literature raised the possibility that an urban area goes through an awkward stage – a population of approximately 1.5 to 2.5 million – during which further growth is highly inefficient.[1] Particularly during this period, in-migrants impose external costs on the metro area that exceed the external benefits gained by agglomeration.

This inefficiency relates to the inability of the existing infrastructure to handle the increased demand. In the Phoenix area, for example, traffic congestion already is a significant problem; every new resident who drives aggravates the situation. In contrast, once freeway construction is complete, the addition of another vehicle may not have such a high cost.

If enough progress is made toward resolving other issues facing the community, such as air pollution, the detrimental effects of further growth may not be as great as they are currently. Failure to address these issues, however, will intensify this painful stage.

SURVEY RESULTS

The Center mailed questionnaires only to *Arizona Business* subscribers who previously had indicated their job title to be at a senior management or higher level. Nearly two-thirds of the 280 respondents indicated they are an owner or partner in their firm. More than one-half of those firms employ fewer than 10 workers. Services and construction/real estate are the industries in which most respondents work. More than two-thirds have lived in the Valley more than 10 years; only 6 percent have been residents less than five years.

The questionnaire, including a tabulation of results, is reproduced as Table 2.

Growth Rate and Size

Net in-migration to the Phoenix area has averaged 47,000 people per year during the 1980s, but a record 64,000 people per year between 1984 and 1986. Providing this information, the survey asked respondents to pick an ideal in-migration rate and to do so from two perspectives: as an individual and as a representative of a business. Their two views were significantly different.

Responses from an individual perspective coalesced in the 0-to-45,000 range. Three-fourths considered an ideal rate to be fewer than 45,000 people per year – less than the average rate of not only the 1980s, but the 1970s as well. In contrast, two-thirds of the responses from a business perspective were for net in-migration of *at least* 45,000 people per year.

The population of the Phoenix area will exceed two million by the end of 1987 and could reach three million by the end of the century. This information produced another divergence of responses regarding an optimal size for the Phoenix area.

As individuals, 42 percent of respondents selected a population of less than two million – equal to or less than the current population. In contrast, responding as representatives of business, 91 percent think the optimal size would be larger than the existing population. This 91 percent is equally split among the categories of two-million-to-three-million, three-million-to-four-million, and four-million-or-more.

Benefits and Costs

Analogously, when asked to evaluate the benefits and costs of growth, respondents indicated the costs to business would be very different from the impact on individuals or society. Sixty-two percent believe growth is *very* beneficial to business, and another 23 percent think it is *somewhat* beneficial. In contrast, less than 45 percent feel growth bears a net benefit to individuals or to society at large (see Figure I).

The most frequently mentioned benefit of growth accrued to businesses: the potential for more customers and higher profits. For individuals and society at large, no benefit was listed nearly as often. Most frequently mentioned – more than twice as many times as the next response – was increased cultural/recreational opportunities. Respondents indicated other benefits would include greater choice of goods and services, wider choice of employment, improvements in the social infrastructure, a healthy and diversified economy, and a broadening of the tax base.

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[1] Yezer and Goldfarb, "An Indirect Test of Efficient Urban Sizes," *Journal of Urban Economics*, January 1978, pp. 46-65.

TABLE 2
SURVEY OF *ARIZONA BUSINESS* READERS

1. Net in-migration to the Phoenix area has averaged 47,000 per year during the 1980s, but a record 64,000 per year between 1984 and 1986. What do you think an ideal annual rate would be? (Respond *both* as an individual and as a business on this and question 2.)

	Individual	*Business*
Zero or negative	15%	1%
Greater than zero, but less than 25,000	27	12
25,000 to 44,999	33	20
45,000 to 64,999	16	36
65,000 or more	9	31

2. The population of the Phoenix area will exceed two million by the end of 1987 and could reach three million by the end of the century. What do you think an optimal size would be?

	Individual	*Business*
Less than 2 million	42%	9%
2 million to 2,999,999	30	31
3 million to 3,999,999	15	30
4 million or more	13	30

3. How do you perceive the benefits/costs of growth in the Phoenix metropolitan area ?

	Very Beneficial	Somewhat Beneficial	Neither Costly nor Beneficial	Somewhat Costly	Very Costly
To individuals	14%	28%	9%	31%	18%
To businesses	62	23	3	8	4
To society at large	14	29	8	31	17

4. List the benefits you see resulting from the Valley's growth and increased size. *(Number of responses)*

To you as an individual:	*Increased cultural opportunities*	118
	Greater choice of goods/services	52
	Wider choice of employment	48
To your business:	*Market potential (more customers)*	213
To society at large:	*Improvements to infrastructure*	40
	Healthier, diversified economy	27
	Broadened tax base	26
	Psychological benefits	24

5. List the costs or problems you see resulting from the Valley's growth and increased size. *(Number of responses)*

To you as an individual:	*Higher taxes*	60		
	Increased cost of living	28		
To your business:	*Increased competition*	50	*Higher taxes*	40
	Greater travel time	46	*Higher costs*	36
To society at large:	*Traffic congestion*	180		
	Pollution (especially air)	141	*Water problems*	49
	Increased crime	77	*Other environmental damage*	43
	Urban sprawl/congestion	55	*Strain on public services*	42

6. How well planned and managed do you think the growth of the Phoenix area has been?

Very well	Well	Mediocre	Poorly	Very Poorly
1%	13%	42%	24%	20%

If you answered "well" or "very well" to question 6, please skip to number 8.

7. To whom do you attribute the inadequate planning and management? Please check one response per line. *(Number of responses)*

	Primarily	*Secondarily*	*None*
Business community	34	133	17
Developers	78	105	11
General Public	42	121	28
Public officials	210	20	2
Other (please specify: ____)	24	6	5

8. Your position in your firm:

Owner/partner	66%	Senior management	15%
Corporate officer	17	Other	2

9. Size of your firm, in number of employees

Less than 10	52%	250 or more	13%
10 to 249	34	not applicable	1

10. Industry of your firm

Manufacturing	5%	Services	42%
Construction/Real Estate	32	Trade	5
Finance/Banking	11	Other	5

11. Your length of residence in the Valley

Less than 5 years	6%
5 to 10 years	25
More than 10 years	69

Source: Center for Business Research, College of Business, Arizona State University

The perceived *costs* of growth and increased size were much more numerous, particularly to individuals and society. Most frequently cited were traffic congestion and air pollution, which also have topped the list on other Phoenix area surveys. Additional costs or problems included increased crime; higher taxes; urban sprawl and congestion; water problems – both quantity and quality; other environmental concerns, such as destruction of the desert and waste disposal; strain on public services and facilities; and higher costs.

Even for businesses, a variety of problems were mentioned, including more competition, increased travel time to deliver goods or attend meetings, higher taxes, and higher costs.

Rating the Planners

Respondents were asked to indicate how well Phoenix area growth has been planned and managed. Only 14 percent believe it has been well-planned. Forty-two percent chose the "mediocre" description; and 44 percent selected "poorly" or "very poorly."

Those who said growth has not been well-planned overwhelmingly indict public officials as primarily responsible (see Figure II). Developers are held next most responsible, with the business community and the general public also frequently selected as secondarily responsible.

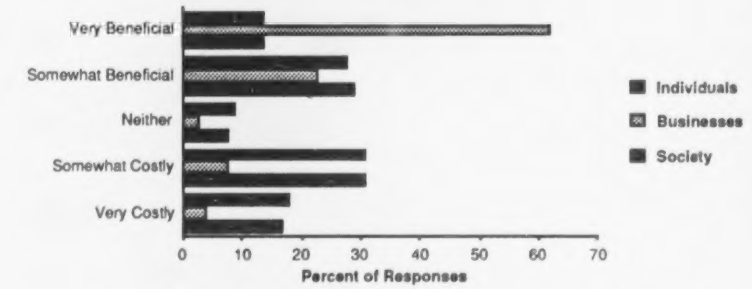
Subsample Responses

Some of the responses varied with the profile of the respondents. By size of firm, small companies do not want growth to be as fast as do larger businesses. Those who work in small firms view costs to the individual as greater than do other respondents.

By length of residence, those who have lived in the Phoenix area the longest desire, from an individual perspective, slightly slower growth and smaller eventual size than do shorter-term residents. The longer-term dwellers also think that growth is less beneficial to individuals. Finally, they place less blame for poor planning on developers.

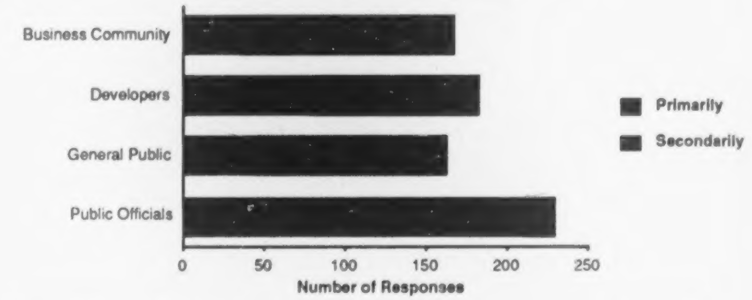
Responses varied most strikingly by industry. People who work in construction or real estate, from both individual and business perspectives, want faster growth and believe a larger population size would be optimal for the Phoenix area. More than those who work in other industries, they perceive the benefits of growth as greater to all groups and view developers as less to blame for any mismanagement of growth. Given that construction and real estate firms stand to gain more from further growth than almost any other type of business, such responses are not surprising.

FIGURE I
PERCEPTIONS OF BENEFITS/COSTS OF GROWTH TO VARIOUS GROUPS
Phoenix Metropolitan Area



Source: Survey of *Arizona Business* readers conducted by the Center for Business Research, College of Business, Arizona State University, June 1987.

FIGURE II
GROUP TO WHOM INADEQUATE GROWTH PLANNING AND MANAGEMENT IS ATTRIBUTED
Phoenix Metropolitan Area



Source: Survey of *Arizona Business* readers conducted by the Center for Business Research, College of Business, Arizona State University, June 1987.

CONCLUSION

Net in-migration by individuals and businesses to the Phoenix metropolitan area is likely to continue. Initially, most migrants experience direct economic benefits, such as higher incomes and wider employment opportunities, which are great enough to outweigh any personal costs. The marginal costs to the community of a new migrant, such as provision of services and infrastructure, may outweigh the average costs to the migrant, but these marginal costs are not passed on to the migrant. Thus, that individual makes a rational decision in moving.

Once living in the area, however, the new resident begins to bear these marginal costs. If quantifiable expenses such as higher taxes and non-quantifiable problems such as air pollution become too great, the recent migrant may become disillusioned and decide that a net advantage may be gained by moving to another area. High mobility results, with the number of people entering the area usually outnumbering those who are leaving.

For example, despite problems that many perceive as serious, the Los Angeles metropolis continues to grow. In-migration, primarily from east of the Mississippi River, outpaces the substantial out-migration. Thus, even if the costs of growth and urban size continue to rise for metropolitan Phoenix, the area probably will grow further, at least in the foreseeable future. The rate of growth could slow, however, as the Valley's problems cause out-migration to increase. Other factors, such as the aging American population, could reduce in-migration as well.

– Tom R. Rex
Research Manager

Survey Methodology

The Center for Business Research mailed surveys to 800 readers of *Arizona Business* during the third week of May. The survey was restricted to individuals living in Maricopa County who previously had indicated their job title to be at a senior management or higher level.

Because this segment of *Arizona Business* readers is not representative of the general population of the Phoenix area, these results cannot be generalized to the entire population. However, the respondents should be representative of the local business community.

By June 15, 280 responses had been received (35 percent). Thanks to all who participated!

Additional Urban Areas Desirable in Arizona

Although a high 75 percent of Arizona's population reside in urbanized areas (defined by the Census Bureau as an incorporated place plus the adjacent densely settled area that, together, have a minimum population of 50,000), the state has only two such areas – Phoenix and Tucson. For its size (Arizona ranked 27th nationally, with 3.2 million residents, in 1985), this distribution is unique. All other comparably sized states have at least three urbanized areas.

In particular, urban areas of approximately 75,000 to 200,000 residents are common in other states, but absent in Arizona. Areas of this size generally are large enough to have an infrastructure and a variety of trade and service firms. They provide a choice to both businesses and individuals, who may, in fact, prefer small urban areas to either small towns, which lack the necessary services, or large metropolitan areas, which typically have higher costs and more problems.

In addition to providing this choice, small urban areas within Arizona would promote interregional equity, spreading prosperity throughout the state. The difference in economic conditions between the urban and rural areas has been considerable during the 1980s. Growth centers such as Phoenix can harm outlying regions, at least in the short term.

STRATEGIES

Pursuit of new urban areas away from Phoenix and Tucson could involve creation of new cities or, more likely, development of existing towns. Such a policy would not have a substantial impact on existing urban areas because total population gains in the new areas would not be that great. Additionally, many of the potential residents of these new areas would not consider living in a larger urban area.

Small towns generally require an active policy to promote growth because their lack of infrastructure discourages many individuals and firms. Consequently, the town has difficulty attaining a size adequate to attract growth on its own.

One way to promote growth is to place public facilities in the town; a university is a key example. Thus, the proposals by Northern Arizona University and the University of Arizona to build branch campuses in Yuma and Sierra Vista, respectively, should be seriously considered. Like its urban areas, Arizona's universities are few and large. Two more universities (plus ASU West) would place Arizona's higher education system in better alignment with those of most states.

Growth might also be stimulated by establishing a major park in the area (the Arizona State Parks System has been described as deficient); by relocating state government offices, if possible; or by developing a special research or tourism facility in the area.

RETIREES

Another reason for encouraging the growth of additional urban areas is to ensure the attractiveness of Arizona to retirees – both permanent migrants and seasonal visitors (snowbirds). Retirees account for approximately one-fourth of the state's permanent net in-migrants. This share should increase in approximately 20 years, when the baby-boom generation reaches retirement age. Many of the older in-migrants have settled in planned retirement communities at the fringes of the urban areas.

Retirees do not benefit as much as working people from the growth and increased size of an urban area. The primary benefits – wider employment opportunities and higher incomes – do not apply to retirees, but they experience virtually all of the costs. Arizona's growing urban areas are likely to surround most of the retirement communities during the next 20 years, making alternative urban locations desirable if Arizona is to remain competitive in attracting older migrants.

– Tom R. Rex
Research Manager

"Migration," from page 1

the oil-dependent states of Texas, Oklahoma, Louisiana, Colorado and Alaska registered sharp declines in in-migration; these decreases preceded the worst of the energy slump by more than one year .

Out-migration typically varies less than in-migration, but the level of out-migration fell by sizable amounts during 1984-85 in California, Massachusetts, Michigan and Ohio. Net migration remained negative in each of the last three states, however. In some farming states, such as Iowa, out-migration increased.

Net in-migration improved sharply in California and by smaller amounts in Arizona and Georgia, while net out-migration became less in Ohio and Michigan. In contrast, net out-migration increased from Louisiana, Oklahoma and Iowa, while net in-migration slipped in Colorado and Texas.

Regionally, net migration improved along the Pacific, Mid-Atlantic and South Atlantic coasts and near the Great Lakes. However, net flows still were negative in the Great Lakes and Mid-Atlantic areas, as well as in the Great Plains and East South Central states. Net in-migration was limited to the Western region (mostly Arizona and California) and to the South Atlantic region (especially Florida and Georgia).

Appreciable levels of net in-migration occurred in just a handful of states. Florida's total was more than twice that of California; the latter's flow greatly exceeded the net flows of Georgia, Arizona and Texas. (Arizona's total surpassed that of Texas for the first time since the early 1970s.) Another gap existed between Texas' total and the net in-migration figures of North Carolina and Virginia.

ARIZONA MIGRATION

In-Migration

Flows of in-migrants to Arizona follow the cyclical pattern of the national economy, peaking during economic expansions. The 1984-85 increase was no exception. In-migration to Arizona from most Western states rose, with the exception of Washington, California and New Mexico. The Great Plains was the only other region from which Arizona in-migration gained.

Like the preceding years of the 1980s, in which Arizona ranked ninth or tenth in the number of in-migrants, the state was eighth on the list of 50 states for 1984-85. Texas, Illinois and Colorado provided comparably large numbers of in-migrants to Arizona, but their numbers were dwarfed by Californians moving to Arizona. When comparing the number of migrants from other states to the resident populations of those states, the rate of in-migration was highest from New Mexico, followed by other Western states.

Out-Migration

Though the number of its residents who moved to other states declined during 1984-85, Arizona still ranked a relatively high 20th. The states to which Arizonans moved changed little from prior years, with the number going to California more than double the total moving to New Mexico; Texas was also the destination of many Arizonans. The highest rate of out-migration, based on population, was to New Mexico, followed by Nevada and other Western states.

Net Migration

The increase in net in-migration to Arizona resulted from improved migration flows with most Western states, as well as with oil-dependent states and with most Midwestern states. The greatest net inflow came from Illinois. Economic problems in Colorado pushed that state into second position, followed by Midwestern states such as Iowa, Michigan, Ohio and Minnesota. Led by Wyoming, states in the Northern Rockies provided the highest rate of net migration to Arizona.

Arizona ranked fourth in net in-migration during 1984-85, placing the state between third and sixth nationally, as it has been throughout the 1980s. Alabama, Arkansas, Georgia, South Carolina and New Mexico were the only states to which Arizona suffered net out-migration.

Efficiency

Arizona's "efficiency," the ratio of in-migration to out-migration, rose from 141 in 1983-84 to 152 in 1984-85, the highest value since 1978-79. Total efficiency of Arizona's migration remained second nationally, to Florida's 172.

Compared to the ratios of other states, Arizona's migration efficiency rose markedly with Iowa, South Dakota, Idaho and Montana. The highest ratios occurred with Iowa (559), Wisconsin (351), Illinois (341) and South Dakota (326).

COMPARISON TO COMPETITORS

Since only a few states benefit from heavy net in-migration, Arizona has little "competition" for migrants. Poor economic conditions elsewhere have pared this list, with Oklahoma and Colorado dropping off during the 1980s. Of the Western states, California was the only real competitor during 1984-85. Despite growing economic problems, Texas still added nearly as much population from migration as did Arizona, though this competition probably ceased temporarily during 1986, when energy problems slowed the Texas economy.

With a net migration jump during 1984-85, California pulled well ahead of Arizona and marked its strongest year since IRS data became available in the early 1970s. Though California's efficiency rose to 123, it remained below Arizona's ratio. California continued to experience net out-migration to Arizona, as well as to Nevada and some Southern states.

Net in-migration to Texas was the weakest since the early 1970s, preceding the first oil shock. The state suffered net out-migration to Arizona, as well as to a number of Western, Southern and Northeastern states.

Florida and Georgia also attract many migrants, but the geographic sources of their new residents (mostly East Coast) largely differ from those of people moving to Arizona. Florida's situation hardly changed in 1984-85; it remained first, by large margins, in both net migration and efficiency. Georgia's growth remains the major story of the 1980s, however. Its net in-migration during 1984-85 surpassed Arizona's for the second straight year. Its efficiency rose from 12th in 1980-81 to third in 1984-85 (144).

Other states that briefly attracted many new residents during the 1970s or early 1980s include Washington, Oregon, Nevada, Colorado and Oklahoma. During 1984-85, Oklahoma and Oregon experienced net out-migration, while Washington, Nevada and Colorado gained slight net in-migration.

– Tom R. Rex
Research Manager

Valley Inflation Moderates During Second Quarter

Following a surge during first quarter 1987, inflation in the Phoenix metropolitan area lessened during the second quarter. However, the seasonally adjusted 1.1 percent gain still exceeded the rates of each of the six quarters from third quarter 1985 through fourth quarter 1986.

Before seasonal adjustment, the Metropolitan Phoenix Consumer Price Index rose 1.3 percent, to 200.7 (1977 = 100). The index was 4.2 percent higher than it was during second quarter 1986.

COMPONENT INDEXES

Increases in transportation costs accounted for much of the second quarter's inflation. The large gain in the transportation category was the second in a row, following deflation throughout 1986 (see Table 1).

Though gasoline prices surged further early in the quarter before stabilizing, price hikes are common in the spring. Thus, the seasonally adjusted gain was a relatively moderate 1.9 percent. Excluding gasoline prices, which have been volatile, the underlying annual rate of inflation remained approximately 4 percent. In the second quarter, the underlying rate slightly exceeded the four quarterly rates of 1986 but fell short of the quarterly rates measured during 1985.

Food and Beverages

Prices of food and beverages rose modestly during the second quarter, the third straight quarter in which little change was measured. Prices of restaurant meals declined for the third consecutive quarter and were lower than in second quarter 1986 (see Table 2).

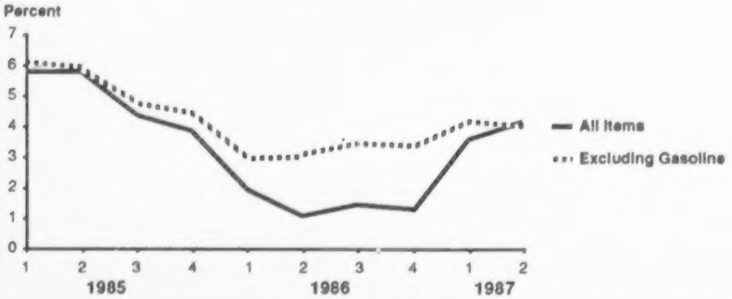
Grocery prices rose more rapidly than in the two prior quarters. Prices of meats, poultry, fish and eggs climbed 2.3 percent, offsetting a decline during the first quarter. Egg prices, however, dropped substantially for the second successive quarter. Though prices of fruits and vegetables jumped 5.1 percent during the second quarter, they were only 4.2 percent higher than in second quarter 1986. The indexes of the other major subcategories barely changed.

Housing

Housing costs rose only 0.2 percent during second quarter 1987, the second smallest gain since seasonally adjusted changes became available in first quarter 1984. Homeowners' costs went up just 0.1 percent, the smallest advance since the methodology for collecting these prices changed in 1983. Renters' costs fell for the third straight quarter. Affected by high vacancy rates, apartment rents were no higher in second quarter 1987 than they were one year earlier.

Fuel and other utility costs increased moderately, mostly because of a hike in piped gas rates. The index for the household furnishings and operations category barely changed, for the third time in the last four quarters.

FIGURE I
METROPOLITAN PHOENIX CPI
Seasonally Adjusted Percent Change
From Same Quarter, Prior Year



Source: Center for Business Research, College of Business, Arizona State University, in cosponsorship with Valley National Bank.

Transportation

Following an 8.1 percent surge during first quarter 1987, transportation costs advanced an additional 3.0 percent during the second quarter. Tempered inflation in gasoline prices accounted for the difference in the rates of the first and second quarters.

Several subcategories contributed to the second quarter advance. Used car price inflation accelerated further; new car prices rose substantially; and vehicle insurance premiums continued to jump. In addition, price increases for vehicle parts and equipment soared to the highest level in three years, in the wake of a decrease during the first quarter.

In contrast, vehicle finance charges dropped for the sixth consecutive quarter, while public transportation costs rose only modestly.

Medical Care

Health care costs recorded their largest gain of the past two years, due to higher inflation rates in most subcategories. Prescription drug prices rose 4.7 percent, the largest increase since seasonal adjustment began in 1984.

Other Categories

Apparel and upkeep costs jumped during the second quarter, continuing the pattern of alternating quarters of gains and reductions. The net effect over the four quarters ending with second quarter 1987 was slight deflation.

Entertainment costs declined, partially offsetting the first quarter advance. Little change was measured in prices of other goods and services.

COMPARISON AREAS

Before seasonal adjustment, the Phoenix area's inflation rate was identical to the national average for the second quarter (see Table 3). Rates were comparable in most major categories, except that inflation in the transportation category was higher in the Valley, neutralized by lower inflation in apparel and upkeep and in entertainment.

Compared to one year earlier, the Phoenix area inflation rate was comparable to the national average. Lower inflation in most major categories negated a slightly greater gain in entertainment costs and a much larger increase in transportation expenses. The Valley experienced bigger increases in gasoline prices at the same time that prices in other transportation subcategories were shifting upward from deflation or slight inflation.

OUTLOOK

The second quarter inflation rate in the Phoenix metropolitan area was slightly less than had been expected at the beginning of the quarter, but not different enough to alter the outlook for the next few quarters. The lower second quarter rate resulted from continued modest increases in the costs of food and beverages and from the near absence of inflation in the housing category.

In the next few quarters, seasonally adjusted inflation rates are likely to remain similar to the 1.1 percent advance measured during the second quarter. Lower inflation in the transportation category probably will be offset by slightly greater gains in both the housing and the food and beverages categories.

The result should be an annual rate that accelerates from the 4.2 percent recorded during the year ending second quarter 1987 to more than 5 percent by year-end 1987. The annual average during 1987 should be near 4.5 percent.

Much of the acceleration during 1987 in the all-items rate results from higher gasoline prices. Excluding gasoline, the underlying inflation rate should remain near 4 percent. However, the all-items rate, which dipped below the underlying rate during 1986, already had surpassed it during second quarter 1987 because of the higher gasoline prices (see Figure I).

– Tom R. Rex
Research Manager

TABLE 1
PERCENT CHANGES IN METROPOLITAN PHOENIX CONSUMER PRICE INDEX

		Seasonally Adjusted from Preceding Quarter					
Expenditure Category	*Relative Importance*	*1st 1986*	*2nd 1986*	*3rd 1986*	*4th 1986*	*1st 1987*	*2nd 1987*
ALL ITEMS	100.0	-0.2	0.4	0.6	0.5	2.1	1.1
Food and Beverages	18.7	0.5	1.0	2.3	0.1	-0.2	0.5
Housing	39.5	0.7	0.2	1.0	0.4	0.5	0.2
Apparel and Upkeep	4.8	-3.3	5.6	-2.5	1.9	-2.5	2.8
Transportation	21.2	-2.5	-1.9	-1.1	-0.2	8.1	3.0
Medical Care	6.9	1.3	1.7	0.2	1.2	1.8	2.7
Entertainment	4.6	-1.7	2.4	-0.6	4.5	2.4	-1.2
Other Goods and Services	4.3	1.7	0.7	2.1	0.6	2.0	0.3

TABLE 2
METROPOLITAN PHOENIX CONSUMER PRICE INDEX
Second Quarter 1987

	Index (1977 = 100)		Percent Change from	
Expenditure Category	*Last Quarter*	*This Quarter*	*Last Quarter **	*Year-Ago Quarter*
ALL ITEMS	198.0	200.7	1.1	4.2
Food and Beverages	181.4	182.2	0.5	2.2
Food	181.5	182.3	0.6	2.1
Food at Home	179.7	181.5	1.5	3.6
Cereal and Bakery Products	203.3	203.7	0.1	3.0
Meats, Poultry, Fish, and Eggs	164.9	165.1	2.3	5.6
Dairy Products	168.7	168.2	-0.5	3.7
Fruits and Vegetables	186.3	198.0	5.1	4.2
Other Food at Home	173.0	172.4	-0.1	0.9
Food Away from Home	182.0	180.9	-1.2	-0.5
Housing	204.3	206.2	0.2	2.0
Shelter	223.1	222.4	-0.1	2.0
Renters' Costs**	118.0	116.8	-0.6	0.4
Homeowners' Costs**	113.6	113.7	0.1	3.0
Fuel and Other Utilities	165.6	176.9	1.3	2.7
Gas (piped) and Electricity	176.2	195.0	1.7	3.3
Household Furnishings/Operations	155.0	155.3	0.1	1.1
Apparel and Upkeep	146.5	150.8	2.8	-0.6
Transportation	189.0	196.0	3.0	10.0
Private Transportation	186.3	193.6	3.2	10.6
New and Used Cars	200.0	208.5	4.8	9.1
Motor Fuels	158.0	169.9	1.9	9.7
Public Transportation	232.6	235.0	0.6	2.0
Medical Care	280.1	284.1	2.7	6.2
Entertainment	212.1	204.7	-1.2	4.9
Other Goods and Services	185.9	186.9	0.3	5.5

*Seasonally adjusted **Base period is second quarter 1983.

TABLE 3
METROPOLITAN PHOENIX AND UNITED STATES CONSUMER PRICE INDEXES
Second Quarter 1987

	Percent Change from Last Quarter*		Percent Change from One Year Ago	
Expenditure Category	*Phoenix*	*United States*	*Phoenix*	*United States*
ALL ITEMS	1.3	1.3	4.2	3.8
Food and Beverages	0.4	0.7	2.2	4.7
Housing	0.9	1.0	2.0	2.9
Apparel and Upkeep	2.9	4.6	-0.6	5.6
Transportation	3.7	1.5	10.0	2.9
Medical Care	1.4	1.4	6.2	6.8
Entertainment	-3.5	1.2	4.9	3.3
Other Goods and Services	0.5	0.6	5.5	5.8

*Not seasonally adjusted

Source (Tables 1, 2 and 3): Metropolitan Phoenix data compiled by the Center for Business Research, College of Business, Arizona State University, in cosponsorship with Valley National Bank; other data in Table 3 are from the U.S. Department of Labor, Bureau of Labor Statistics.

June Purchasing Indicators Stay Positive; Inflation Moderates

All of the key purchasing indicators continued positive in June, for the sixth consecutive month. New order bookings increased at the strongest rate in almost three years; inventory additions continued; delivery times lengthened; and production and employment both registered good hikes. The Arizona economy reached new high ground as the first half of 1987 came to a close.

Improvement in the nation's trade deficit, caused by the lower dollar, and increased productivity of U.S. firms will help to extend the growth curve over the balance of the year. While further price hikes will occur, inflation appears to be contained at a workable level. However, as the economy continues to grow, Arizona firms will be challenged by lengthened delivery times, spot shortages of purchased items, and problems in finding an adequate supply of skilled workers.

Table 1 presents the results of the June survey of Arizona purchasing managers. Analysis of these results follows.

PRICES

Prices paid for purchased goods and services accelerated in June at the same rate as in May. The rate of inflation during the first half of the year was consistently higher than during almost any month of 1986, but it has stabilized over the past three months. A return to double-digit price hikes seems unlikely. If inflation continues at a moderate pace during the second half of 1987, it poses no threat to the measured expansion.

DELIVERY TIME

Delivery time on vendor shipments increased sharply, as suppliers' backlogs grew larger. The lead time indicator's increase rate in June was almost double that of May and the largest in almost three years (since July 1984) – strong evidence that the economy is building at a healthy rate.

INVENTORY LEVELS

Inventory levels of purchased materials continued to grow and at a rate somewhat greater than in the previous two months. The net additions to inventory that started in January and proceeded through each of the first six months of 1987 have strengthened the economy's staying power.

NEW ORDERS

New orders received by Arizona firms recorded another strong advance in June; it was the largest jump not only of the second quarter but since March. Consistently strong new order increases have been recorded for each month of 1987 and are providing the thrust needed to maintain the momentum.

PRODUCTION

Production continued to grow, although at a lower rate than in May and at the lowest rate since January. While the production rate is not keeping pace with the incoming order flow (possibly a reflection of the summer doldrums), it has been strong during the first half of 1987.

EMPLOYMENT

Employment rose for the sixth consecutive month but, as with production, at a slower rate than in May and at the lowest rate since January. Employment growth has been strong so far this year and should continue to be healthy in the months immediately ahead.

PURCHASES

Purchases of materials and supplies went up in June at a greater rate than in May. The purchases indicator began to enjoy strong increases in January and has helped to propel the economy upward.

– Harold Fearon

Dr. Fearon is the National Association of Purchasing Management Professor in the ASU College of Business.

Arizona Purchasing Survey

Now in its 25th year of monthly reporting, Dr. Harold Fearon's survey of Arizona business conditions utilizes data from a questionnaire sent to members of the purchasing management associations of Arizona and southern Arizona. It asks them to indicate the direction of activity - higher, unchanged, or lower - of seven key measures of economic activity in the month just ended. These purchasing managers deal daily with supply, demand, and price factors in the marketplace; their aggregate readings have accurately charted the state's economic course for two decades, providing timely data on turning points.

TABLE 1
JUNE PURCHASING SURVEY

	Percent of Purchasing Managers Indicating Each Response (June compared to May)		
Key Indicators	*Higher*	*Same*	*Lower*
Prices paid for major commodities	35	62	3
Delivery time from vendors	37	57	6
Purchased materials inventory level	36	43	21
New orders received	48	35	17
Production	36	48	16
Employment	24	64	12
Purchases	52	33	15

Source: Purchasing Management Association of Arizona and the Purchasing Management Association of Southern Arizona.

Arizona Leading Index Changes Course, Moves Up in May

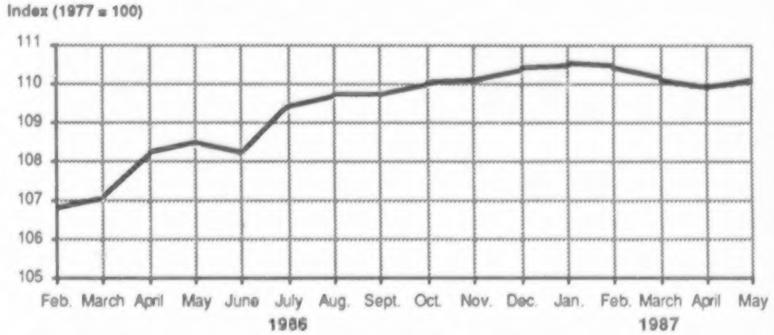
The Arizona Index of Leading Economic Indicators advanced in May, reversing direction after three consecutive months of decline. The May index reached 110.1, up .2 percent from April's 109.9 (see Figure I).

Five of the index's 10 components increased in May. The greatest positive contribution came from Arizona manufacturing hours worked; this indicator rose to 40.9. While some workers gained hours, others faced layoffs. First-time unemployment insurance claims increased slightly from the previous month. Sensitive materials prices were up slightly, pulling the index upward.

The greatest negative contribution to the index came from a decrease in the money supply, the third in the past four months. This drop brought the money supply to its lowest level since October 1986. Another key indicator closely watched by analysts, the value of residential building permits, declined for the third consecutive month.

Three components derived from a survey of Arizona purchasing managers exerted a positive influence on the index. Inventory levels, new orders, and production all increased on a seasonally adjusted basis. However, those surveyed reported declines in delivery times and employment.

FIGURE I
ARIZONA INDEX OF LEADING ECONOMIC INDICATORS



Source: Economic Outlook Center, College of Business, Arizona State University

TABLE 1
NET CONTRIBUTION OF INDIVIDUAL COMPONENTS TO THE ARIZONA INDEX OF LEADING ECONOMIC INDICATORS

	Net Contribution[+]			
	Feb.	*Mar.*	*Apr.*	*May*
Delivery Time*	.08	.04	.01	-.04
Inventory Levels*	-.01	.10	-.08	.04
New Orders*	-.03	.07	-.05	.01
Production*	.00	.06	-.04	.02
Employment*	.05	.01	.00	-.04
Residential Building Permits	.25	-.05	-.07	-.01
Unemployment Insurance Claims	.01	-.13	.09	-.02
Average Workweek, Manufacturing	-.07	-.07	-.09	.19
Money Supply	-.20	-.13	.02	-.13
Change in Sensitive Materials Prices	-.19	-.11	.00	.18
OVERALL INDEX CHANGE (%)	-.1	-.3	-.2	.2

[+] The net contribution of each component is calculated by multiplying the monthly percent change in its index by its relative importance.

*Based on indicators from the purchasing management associations of Arizona and southern Arizona.

Source: Economic Outlook Center, College of Business, Arizona State University

OUTLOOK

Although the leading index turned up slightly in May, the evidence does not indicate that the economic expansion, which is now more than four years old, is finding new vigor and vitality. With the money supply declining and the Arizona construction sector continuing to weaken, national and local conditions for a last-gasp spurt of activity are simply not present. For the remainder of 1986, the index signals slow-but-positive growth, at a pace well below that now viewed as "normal" by many Arizonans.

– **Lee R. McPheters,** *Director*
Economic Outlook Center

ARIZONA ECONOMIC INDICATORS

	Month or Quarter	*Value*	*Percent Change from Previous Period*	*Percent Change from Year Ago*	**Year-to-Date** *Value*	*Percent Change from Year Ago*
GROSS STATE PRODUCT						
(In Billions of Dollars, at Annual Rate)						
Arizona - Current Dollars	4th Qtr.	51.846	0.4	5.5	NA	NA
Arizona - 1982 Dollars	4th Qtr.	44.902	-0.4	3.1	NA	NA
CONSUMER PRICE INDEX (1977 = 100)						
Metropolitan Phoenix	2nd Qtr.	200.7	1.4	4.2	NA	NA
INDEX OF LEADING ECONOMIC INDICATORS (1977 = 100)						
Arizona	May	110.1	0.2	1.5	NA	NA
BUILDING PERMITS						
(Total Dollar Value in Thousands)						
Maricopa County	May	359,168	11	-8	1,662,512	-8
Pima County	May	44,224	-26	-42	265,973	-29
Balance of State	May	57,899	2	7	246,190	-6
Arizona	May	461,291	-11	-11	2,174,675	-11
TOTAL HOUSING UNITS AUTHORIZED						
Maricopa County	May	2,472	4	-58	12,459	-46
Pima County	May	394	-37	-63	3,207	-32
Balance of State	May	926	16	-6	4,165	-27
Arizona	May	3,792	0	-52	19,831	-41
HOME SALES						
Maricopa County - Number	June	6,450	25	-1	30,850	8
Maricopa County - Median Price	June	81,000	1.9	2.3	79,300	3.7
HOUSING AFFORDABILITY INDEXES						
Metropolitan Phoenix - New Homes	1st Qtr.	102	4.1	12.1	NA	NA
Metropolitan Phoenix - Resale Homes	1st Qtr.	122	7.0	14.0	NA	NA
MORTGAGE INTEREST RATES						
(Conventional, 30-year, Fixed-rate)						
Maricopa County	June	10.4	-1.0	-1.9	NA	NA
POPULATION ESTIMATES						
(In Thousands)						
Maricopa County	1st Qtr.	1,961	1.0	4.2	NA	NA
Arizona	1st Qtr.	3,422	0.9	3.6	NA	NA
ELECTRICAL POWER SALES						
(In Millions of Kilowatt Hours)						
Arizona	May	3,140	12.7	4.6	14,702	9.3

NA = Not Applicable

Source: Center for Business Research, College of Business, Arizona State University

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Maricopa County Receives Most Migrants

Maricopa County received a disproportionately large 74 percent share of Arizona's net in-migration between 1980-81 and 1984-85, based on Internal Revenue Service records. In contrast, Pima County's share – 12 percent – was unexpectedly low, less than its share of Arizona's total population.

Yavapai and Mohave Counties received the greatest net in-migration of the non-metropolitan counties. Six counties – Apache, Gila, Graham, Greenlee, Navajo and Santa Cruz – experienced net out-migration during the 1980-85 period. Apache and Navajo Counties lost people in each year, while the other net losers posted gains in 1980-81 and/or 1981-82.

Maricopa County's migration followed the economic cycle, with greater flows during the expansion years of 1983-84 and 1984-85; the least net in-migration occurred during the 1982 recession. Among the other counties, however, local conditions sometimes overwhelmed the effect of the economic cycle on migration flows. Of most interest, but difficult to explain, is the pattern in Pima County, where the weakest flows occurred during the expansion.

This article marks the first time that county migration flows have been analyzed; the remainder of the

See "Migrants," page 2

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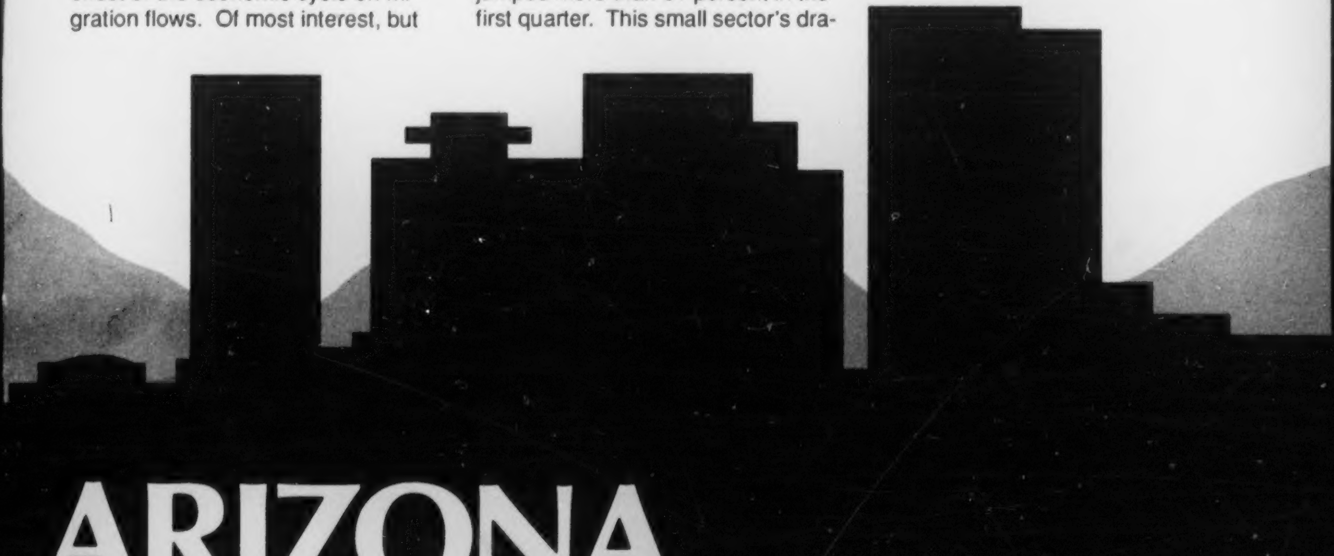
Arizona GSP Surges in First Quarter

The Arizona Gross State Product (GSP) expanded at an inflation-adjusted 13.5 percent annual rate during first quarter 1987. This rapid growth followed smaller increases in the last three quarters of 1986, retracing the Arizona economy's pattern of the past three years. GNP also exhibited an uptick in growth for the first quarter, but the magnitude of the surge in Arizona GSP far surpassed it.

The uptrend was not spread equally across all sectors of the economy. Although agriculture constitutes only about 3 percent of total Arizona GSP, agricultural product jumped more than 61 percent in the first quarter. This small sector's dramatic increase in output more than offset its declines of 1985 and 1986 and accounted for nearly one-half of total first quarter GSP growth, pushing agricultural GSP to record levels. Large quarterly changes in agricultural gross product are common, however; thus, the data do not indicate a strong rebound from agriculture's problems of the last few years.

In addition, the mining; trade; finance, insurance, and real estate; and services industries experienced healthy growth during the January-through-March period. Construction and manufacturing declined.

See "GSP," page 3



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"Migrants," from page 1

article will concentrate on migratory movement during 1984-85, the latest year for which data are available. Like the state statistics, IRS data on flows to and from all counties in the country do not represent everyone who moved. The Center for Business Research plans to issue annual reports on county migration flows, similar to its updates on state flows (see the August *Arizona Business* for the latest state information).

1984-85 MIGRATION SUMMARY

When the number of people moving into or out of the county is compared to the size of the resident population, Apache, Greenlee and Cochise Counties experienced the greatest migration during 1984-85. In contrast, the urban counties (and Santa Cruz County) had the lowest migration rates.

In addition to the six counties that experienced net out-migration during the first five years of the 1980s, Cochise County also suffered a net outflow during 1984-85. Pima County's 1984-85 net gain was little more than the net increases of much smaller Yavapai and Yuma Counties.

Migration efficiency – the ratio of in-migration to out-migration – was highest in Maricopa County at 1.7. The efficiencies of Mohave (1.5) and Yavapai (1.4) Counties were also well above average. Greenlee County's ratio was very low at 0.5; Navajo and Graham Counties each had efficiencies of 0.8.

Considering only migration from out of state, Santa Cruz and Gila Counties recorded small net inflows, leaving only five counties with a net loss. Pinal, Mohave and Yavapai Counties all had efficiencies of 1.7, trailing Maricopa County's 1.9.

If only in-state migration is reviewed, just three counties – Maricopa, Yavapai and Apache – received a net inflow. Generally, poor economic conditions prompted people from throughout Arizona to move to the Phoenix area. Maricopa County's in-state migration efficiency – 1.2 – was equalled by Yavapai County. This relatively low efficiency indicates that net in-migration from in-state sources was not that great; many people moved to Maricopa County, but many also left.

1984-85 COUNTY DETAIL

Maricopa County

The Phoenix area received net in-migration from all Arizona counties except Yavapai. The largest net number came from Pima County.

Regionally, more than one-half of the net gain came from the Midwest, with which Maricopa County had a high efficiency of 3.4. Other western states provided less than one-fourth of the county's net in-migration – an efficiency of just 1.4. The migration efficiency with the South was equivalent, but the flows were less than one-half the magnitude of those with the West. With a higher efficiency of 2.3, the Northeast provided more net migrants than the South.

Of individual counties, Cook County (Chicago), Illinois, provided by far the highest *net* number of in-migrants to the Phoenix area. The greatest *actual* number of in-migrants came from Los Angeles County, but the efficiency of this migration was just 1.3, resulting in a net in-migration flow less than one-third the size of that from Cook County.

Other counties with which Maricopa County experienced large gross flows (in-migration plus out-migration) include the California counties of San Diego, Orange, San Bernardino and Santa Clara (San Jose); and Clark County (Las Vegas), Nevada. The Phoenix area lost more residents than it gained from San Diego and San Bernardino Counties.

Additional counties with which the Phoenix area enjoyed high efficiencies include Hennepin (Minneapolis-St. Paul), Minnesota; Salt Lake, Utah; and Denver, Colorado. The only other counties east of the Mississippi River that provided a sizable number of migrants were DuPage (Chicago), Illinois; Cuyahoga (Cleveland), Ohio; and the Detroit area counties of Wayne and Oakland.

Pima County

Net migration flows and migration efficiency in Pima County were much weaker than those in Maricopa County. Pima County sustained net out-migration with several Arizona counties, particularly Maricopa and Yuma.

More than 70 percent of Pima County's net in-migration from out of state came from the Midwest, but its 2.0 efficiency with that region was much lower than that of Maricopa County. Migration from the Northeast was positive, with a 1.6 efficiency, but the Tucson area suffered a net outflow to the South and barely received a net inflow from the West.

The greatest number of net in-migrants came from Los Angeles County, with which Pima County's efficiency was 1.3, equivalent to the Phoenix area's ratio with Los Angeles. In contrast, Pima County's efficiency with Cook County, Illinois, which provided nearly as many net in-migrants as Los Angeles, was only 2.3, barely one-half Maricopa County's ratio with Cook County.

The Tucson area suffered net out-migration to several counties, including the California counties of San Diego, Santa Clara, Orange and San Bernardino; Bernalillo County (Albuquerque), New Mexico; Clark County, Nevada; and Dallas County, Texas.

Non-Metropolitan Counties

Most of the rural counties received net in-migration, though of small numbers, from the Northeast and Midwest. However, net out-migration was common to the South and West.

Many of the counties did not have a sizable net flow with any out-of-state county. However, Mohave and Yavapai Counties received a net inflow from the Los Angeles-Orange County area. The northern counties of Apache, Navajo and Coconino each suffered net out-migration to McKinley, New Mexico, which borders Northern Arizona.

– Tom R. Rex
Research Manager

"GSP," from page 1

In recent years, the state's agriculture and mining industries have suffered downturns, even though the overall economy has been in an upswing. Adjusted GSP, which excludes the volatile mining and agriculture industries and, therefore, more closely follows the general economic cycle, has experienced a healthier growth trend than the total GSP series. Given the increases in agriculture and mining for first quarter 1987, adjusted GSP did not rise as much as total GSP during that period.

1986 REVISIONS

After revisions to most data used to calculate GSP, growth for 1986 – 5.2 percent on an inflation-adjusted basis – was stronger than originally reported (4.8 percent). The revisions particularly affected fourth quarter GSP, which improved from a 1.6 percent decline to an increase of 5.9 percent, at an annual rate. Growth was stronger than the original 1986 estimates in the construction, manufacturing, and government sectors, while estimates for the trade and the finance, insurance, and real estate industries were too high. The adjusted GSP figure for 1986 was also revised up from the original growth estimate of 5.7 percent to 6.0 percent. However, even with this revision, GSP turned in its weakest performance since the recession year 1982.

The 1986 GNP quarterly estimates were also revised upward, implying a growth rate of 2.9 percent for the year, rather than the 2.5 percent figure released earlier. This more positive indication of national economic activity continued into 1987; GNP expanded further, rising at an annual rate of 4.4 percent in the first quarter.

OUTLOOK

Weakness in the state's construction and manufacturing sectors remain a legitimate cause for concern. However, the surge in revised GSP growth estimates for fourth quarter 1986 and first quarter 1987 should reduce any worries induced by the original estimate of a decline in fourth quarter GSP. Based on the latest estimates, the Arizona economy again seems to be following the familiar pattern of rapid first quarter growth. Arizona economists apparently feel that the "high-first-quarter-then-lower-rest-of-year" pattern will recur in 1987, since the latest *Arizona Blue Chip* consensus forecast for inflation-adjusted Arizona personal income is for only about 3 percent growth in 1987.

– **Timothy D. Hogan,** *Director*
Center for Business Research

TABLE 1
ECONOMIC GROWTH

	Arizona Gross State Product				Gross National Product
Quarter	*Billions of Current Dollars, Annualized*	*Billions of 1982 Dollars, Annualized*	*Annualized Percent Change (1982 Dollars)*	*Annualized Percent Change (Adjusted GSP)**	*Annualized Percent Change (1982 Dollars)*
First 1985	46.821	42.516	17.5	15.8	3.8
Second 1985	47.218	42.450	-0.6	3.2	2.1
Third 1985	48.319	43.089	6.0	7.5	4.0
Fourth 1985	49.134	43.548	4.3	5.0	3.1
First 1986[r]	50.802	44.729	10.8	9.4	5.2
Second 1986[r]	51.217	44.871	1.3	4.1	0.6
Third 1986[r]	51.868	45.096	2.0	2.0	1.5
Fourth 1986[r]	53.092	45.766	5.9	6.7	1.5
First 1987	55.267	47.310	13.5	7.6	4.4

*The adjusted GSP is the annualized GSP in billions of 1982 dollars, minus the contributions of the agriculture and mining industries.

[r] Revised

Source: Center for Business Research, College of Business, Arizona State University. GNP data are from the U.S. Department of Commerce, Bureau of Economic Analysis.

Correction

In the June 1987 Arizona Business, *the "new" and "resale" columns of numbers were mistakenly reversed in the "number of sales" section of the "Metropolitan Phoenix Home Sales" table on page 8. The corrected section follows:*

TABLE 1
METROPOLITAN PHOENIX HOME SALES

	Single Family			Townhouse/Condominium			Grand
First Quarter 1987	*Resale*	*New*	*Total*	*Resale*	*New*	*Total*	**Total**
Number of sales	10,080	1,270	11,340	2,510	470	2,980	14,320
Percent change from:							
Fourth quarter 1986	-4	-49	-13	25	-33	10	-9
First quarter 1986......	6	0	5	51	-13	35	10

Source: Arizona Real Estate Center and Center for Business Research, College of Business, Arizona State University; from data supplied by Marketron Services, Inc., Phoenix.

Home Sales Remain Strong in Second Quarter

The number of homes sold in the Phoenix metropolitan area during second quarter 1987 rose to the second highest quarterly total of the 1980s. Compared to second quarter 1986, the number of sales was 7 percent higher (see Table 1), the eighth consecutive quarter in which sales exceeded the number of the year-earlier quarter.

Strength in the resale home market accounted for the improvement in sales during the year ending in the second quarter. Sales of existing homes increased 9 percent, while new home sales declined 4 percent.

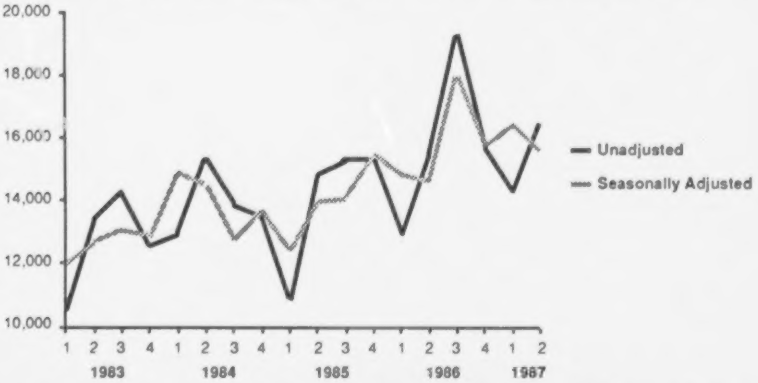
Seasonally adjusted, the number of second quarter sales (15,560) declined 5 percent from the first quarter total and was less than the numbers for the two prior quarters as well (see Figure I). Existing home sales fell slightly between the first and second quarters, but the number of new homes sold rose, following two sharp quarterly declines.

MEDIAN HOME PRICE AND APPRECIATION RATE

The median price of all homes sold in the Phoenix area during the second quarter reached $80,000 for the first time. Though the seasonally adjusted increase from the first quarter was a relatively large 1.6 percent, the median sales price during second quarter 1987 was only 3.1 percent higher than in second quarter 1986. This annual advance was the smallest since 1985.

After a brief recovery during 1986, prices of townhouses and condominiums again are showing softness. Seasonally adjusted, their median sales price fell in the second quarter. Compared to second quarter 1986, the median sales price of resale units was no higher in second quarter 1987; the median sales price of new townhouses and condominiums declined 7 percent.

FIGURE I
NUMBER OF HOMES SOLD IN PHOENIX METROPOLITAN AREA



Source: Arizona Real Estate Center and Center for Business Research, College of Business, Arizona State University; from data supplied by Marketron Services, Inc., Phoenix.

The median price per square foot of resale properties dropped slightly in the second quarter. Compared to second quarter 1986, the square-foot price for single family homes was only 2.6 percent higher, while that for townhouses and condominiums was virtually unchanged. These modest gains correspond to the appreciation rate measured in the Phoenix area. For single family homes, the quarterly rate was 0.7 percent, placing the annual rate between the second quarters of 1986 and 1987 at 2.6 percent. Appreciation rates for townhouses and condominiums were lower: a quarterly rate of 0.0 percent and an annual rate of 0.3 percent.

OUTLOOK

After rising sharply in April, mortgage interest rates have stabilized at approximately 10 percent for a conventional, 30-year, fixed-rate loan. Such rates should keep seasonally adjusted home sales close to the volume measured during the second quarter. Sales are unlikely to match the records set during 1986 unless interest rates decline.

Home prices and housing appreciation probably will continue to rise at a modest pace. With inflation holding near 4 percent, housing affordability stabilizing, and competitiveness in the Phoenix area housing market continuing, little pressure exists for higher home prices.

– Tom R. Rex
Research Manager

TABLE 1
METROPOLITAN PHOENIX HOME SALES

	Single Family			Townhouse/Condominium			Grand
Second Quarter 1987	*Resale*	*New*	*Total*	*Resale*	*New*	*Total*	Total
Median sales price	$81,500	$92,925	$84,000	$65,000	$64,500	$65,000	$80,000
Percent change from:							
First quarter 1987	2.5	-1.7	3.2	0.8	-6.5	0.0	2.4
Second quarter 1986 ...	5.6	5.7	5.0	0.0	-7.3	-2.1	3.1
Number of sales	11,570	1,870	13,440	2,510	590	3,090	16,530
Percent change from:							
First quarter 1987	15	47	19	0	26	4	15
Second quarter 1986 ...	5	-2	4	28	-8	19	7

Source: Arizona Real Estate Center and Center for Business Research, College of Business, Arizona State University; from data supplied by Marketron Services, Inc., Phoenix.

Housing Affordability Sags in Second Quarter

Affordability of Phoenix area homes plummetted during second quarter 1987, after generally advancing for more than two years (see Figure I). The index for new homes dipped below 100, having exceeded that level for just one quarter. At 96, the index was 6 percent lower than it was in the first quarter (see Table 1). Though the index for resale homes remained relatively high at 109, its second quarter decline – 11 percent – was greater than that in the new home index.

An index at or above 100 indicates that a median-income household is able to qualify for a median-priced home, assuming a 15 percent downpayment on a fixed-rate, conventional, 30-year mortgage and an income qualification factor of 28 percent. During second quarter 1987, a median-income household could afford an $89,650 home – more than the median-priced resale home but less than the median-priced new home.

COMPONENT CHANGES

A sharp rise in mortgage interest rates during second quarter 1987 caused the affordability indexes to decline. The interest rate advance was the first since third quarter 1984 (see Figure II) and the largest since the affordability indexes began in 1981. The effective interest rate (contract rate plus fees and charges, or "points") climbed to 10.6 percent, nearly as high as in the second and third quarters of 1986. As a result, the affordability indexes dropped to levels barely above those of second quarter 1986.

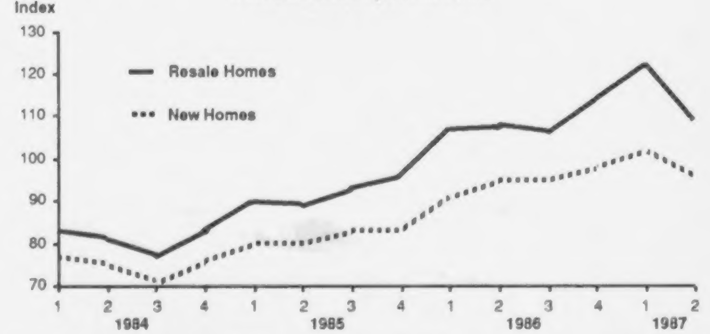
The index for resale homes declined more than the index for new homes because the median sales price of existing homes advanced 2.5 percent, while the median sales price of new homes declined 1.7 percent during the second quarter.

OUTLOOK

Home prices and incomes should continue to rise at similar rates. With mortgage interest rates remaining steady, the affordability indexes should stabilize, near the levels of the second quarter.

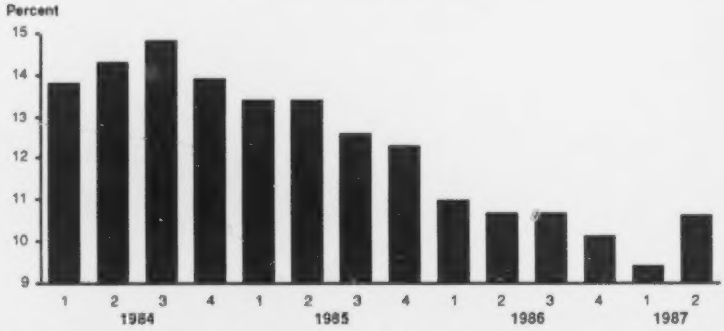
– **Tom R. Rex**
Research Manager

FIGURE I
AFFORDABILITY INDEXES
Phoenix Metropolitan Area



Source: Arizona Real Estate Center and Center for Business Research, College of Business, Arizona State University

FIGURE II
EFFECTIVE MORTGAGE INTEREST RATES
Phoenix Metropolitan Area



Source: Federal Home Loan Bank Board *News*

TABLE 1
HOUSING AFFORDABILITY INDEXES
Metropolitan Phoenix

			Resale Homes			New Homes		
Quarter	*Median Gross Monthly Income*	*Effective Interest Rate*	*Median Sales Price*	*Monthly Housing Payment*	*Affordability Index*	*Median Sales Price*	*Monthly Housing Payment*	*Affordability Index*
1st 1986	$2,730	11.0%	$75,000	$710	107	$88,200	$840	91
2nd 1986	2,760	10.7	77,150	720	108	87,950	820	95
3rd 1986	2,800	10.7	79,150	740	106	88,850	830	95
4th 1986	2,840	10.1	79,100	700	114	91,900	810	98
1st 1987	2,890	9.4	79,500	660	122	94,500	790	102
2nd 1987	2,940	10.6	81,500	750	109	92,925	860	96

Source: Arizona Real Estate Center and Center for Business Research, College of Business, Arizona State University. Interest rates are from the Federal Home Loan Bank Board *News*.

July Purchasing Indicators Reflect Slowing Growth

The Arizona economy continued to expand in July, although the rate of growth slowed somewhat. New orders and production grew at only half the June rate, and inventory declined for the first time since November, removing that growth stimulus. Employment, however, registered a good increase, its largest in four months.

While the growth rate showed signs of moderating a bit as the last half of the year began, the economy should continue to expand through the end of 1987. Inflation will intensify somewhat but should remain at a manageable level. Further employment increases can be anticipated as the Arizona economy finishes its fifth year of slow, but sustained, expansion.

Table 1 presents the results of the July survey of Arizona purchasing managers. Analysis of these results follows.

PRICES

Prices paid for purchased goods and services advanced again in July but at a slightly lower rate than in June. While the price increase rate so far in 1987 has been higher than in 1986, it still is relatively moderate and shows no sign of curtailing the upward economic growth trend.

DELIVERY TIME

Delivery time on shipments from vendors stretched at a somewhat smaller rate in July than in June. Vendors to Arizona firms continue to experience growing levels of business.

INVENTORY LEVELS

Inventory levels of purchased materials dropped slightly in July, the first decline since November 1986. Substantial inventory buildups over the past six months have provided staying power to the economy, but inventory growth no longer is contributing to the economic expansion.

NEW ORDERS

New orders received by Arizona firms went up again, as they have each month this year. However, the July gain was well under the increase rate of June and the smallest since December. While the halving of the new order increase rate from June to July may indicate only a temporary decline, it also shows that the speed of economic growth is slowing.

PRODUCTION

Production also increased but at half the June rate and at the slowest rate since December. As usual, the production indicator followed the new order rate closely.

EMPLOYMENT

Employment rose at a substantially larger rate than in June. This indicator's growth has been strong in 1987, and July's increase was not only the seventh in a row but also the highest since April.

PURCHASES

Purchases of materials and supplies grew again but at a substantially lower rate than in June. This increase was the smallest since December and substantially less than those of the previous three months.

– Harold Fearon

Dr. Fearon is the National Association of Purchasing Management Professor in the ASU College of Business.

Arizona Purchasing Survey

Now in its 25th year of monthly reporting, Dr. Harold Fearon's survey of Arizona business conditions utilizes data from a questionnaire sent to members of the purchasing management associations of Arizona and southern Arizona. It asks them to indicate the direction of activity - higher, unchanged, or lower - of seven key measures of economic activity in the month just ended. These purchasing managers deal daily with supply, demand, and price factors in the marketplace; their aggregate readings have accurately charted the state's economic course for two decades, providing timely data on turning points.

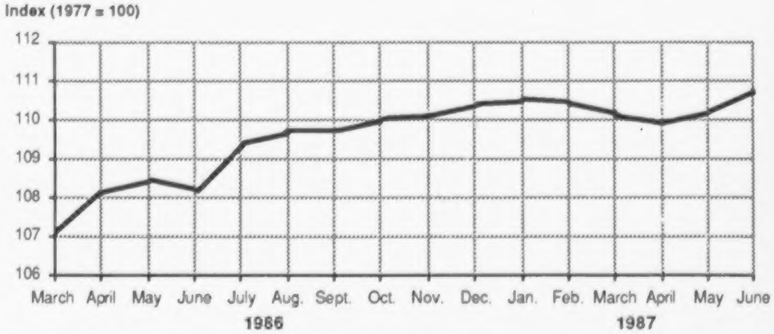
TABLE 1
JULY PURCHASING SURVEY

	Percent of Purchasing Managers Indicating Each Response (July compared to June)		
Key Indicators	***Higher***	***Same***	***Lower***
Prices paid for major commodities	33	64	3
Delivery time from vendors	35	56	9
Purchased materials inventory level	29	40	31
New orders received	40	36	24
Production	34	42	24
Employment	26	66	8
Purchases	44	33	23

Source: Purchasing Management Association of Arizona and the Purchasing Management Association of Southern Arizona

Arizona Leading Index Rises Again in June

FIGURE I
ARIZONA INDEX OF LEADING ECONOMIC INDICATORS



Source: Economic Outlook Center, College of Business, Arizona State University

TABLE 1
NET CONTRIBUTION OF INDIVIDUAL COMPONENTS TO THE ARIZONA INDEX OF LEADING ECONOMIC INDICATORS

	Net Contribution⁺			
	Mar.	*Apr.*	*May*	*June*
Delivery Time*	.04	.01	-.04	.17
Inventory Levels*	.10	-.08	.04	.03
New Orders*	.07	-.05	.01	.10
Production*	.06	-.04	.02	.01
Employment*	.01	.00	-.04	.04
Residential Building Permits	-.05	-.07	-.01	.12
Unemployment Insurance Claims	-.13	.09	.04	-.05
Average Workweek, Manufacturing	-.07	-.09	.21	-.09
Money Supply	-.13	.02	-.13	-.12
Change in Sensitive Materials Prices	-.11	.00	.14	.21
OVERALL INDEX CHANGE (%)	-.3	-.2	.3	.5

⁺The net contribution of each component is calculated by multiplying the monthly percent change in its index by its relative importance.

*Based on indicators from the purchasing management associations of Arizona and southern Arizona.

Source: Economic Outlook Center, College of Business, Arizona State University

The Arizona Index of Leading Economic Indicators rose in June, the second consecutive monthly increase after three months of decline. The June index advanced to 110.7, a gain of .5 percent from May's revised 110.2 (see Figure I).

Although the June figure represents a new high for the index, the current value is only 2.3 percent greater than that of June 1986. The index has consistently signaled slow but positive economic growth for the past two years. The most recent figures on employment gains and personal income confirm that the Arizona economy is continuing to wind down from the record-setting growth of 1984 and 1985.

INDEX COMPONENTS

Seven of the index's 10 components rose in June. The greatest positive influence came from increases in seasonally adjusted components derived from a survey of Arizona purchasing managers. Gains were reported in purchased materials inventory levels, new orders, production, delivery times, and seasonally adjusted employment. The value of residential building permits and sensitive materials prices also pulled the index upward.

Negative influences on the index included a rise in first-time Arizona unemployment insurance claims and a slight decline in the manufacturing workweek, to 40.6 hours from the previous level of 41 hours. The money supply also fell, the fourth decline in the past five months.

OUTLOOK

The Arizona Index of Leading Economic Indicators is a reliable predictor of economic performance for the period at least six months ahead. With the June figures now in, it is safe to project sluggish economic growth rates for the remainder of 1987, similar to those of the first half.

Most of the current economy's strength seems to be in the transportation, communication, and public utilities sector. Construction is on the verge of a recession, evidenced by negative employment growth compared to one year ago. Other sectors, including the once-robust services industry and the finance, insurance, and real estate sector, are struggling with slow rates of growth. The extent to which consumer spending is weakening in the state is illustrated by a comparison of recent employment growth between the trade and mining industries. Mining jobs actually have increased faster than trade jobs during several months of this year.

– **Lee R. McPheters,** *Director*
Economic Outlook Center

ARIZONA ECONOMIC INDICATORS

	Month or Quarter	*Value*	*Percent Change from Previous Period*	*Percent Change from Year Ago*	**Year-to-Date** *Value*	**Year-to-Date** *Percent Change from Year Ago*
GROSS STATE PRODUCT (In Billions of Dollars, at Annual Rate)						
Arizona - Current Dollars	1st Qtr.	55.267	4.1	8.8	NA	NA
Arizona - 1982 Dollars	1st Qtr.	47.310	3.4	5.8	NA	NA
CONSUMER PRICE INDEX (1977 = 100)						
Metropolitan Phoenix	2nd Qtr.	200.7	1.4	4.2	NA	NA
INDEX OF LEADING ECONOMIC INDICATORS (1977 = 100)						
Arizona	June	110.7	0.5	2.3	NA	NA
BUILDING PERMITS (Total Dollar Value in Thousands)						
Maricopa County	June	318,636	-11	8	1,981,148	-6
Pima County	June	47,049	6	-46	313,022	-33
Balance of State	June	71,281	23	62	317,471	3
Arizona	June	436,966	-5	2	2,611,641	-9
TOTAL HOUSING UNITS AUTHORIZED						
Maricopa County	June	2,036	-17	-38	14,495	-45
Pima County	June	429	8	-73	3,636	-42
Balance of State	June	867	-6	-3	5,032	-24
Arizona	June	3,332	-12	-42	23,163	-41
HOME SALES						
Maricopa County - Number	June	6,450	25	-1	30,850	8
Maricopa County - Median Price	June	81,000	1.9	2.3	79,300	3.7
HOUSING AFFORDABILITY INDEXES						
Metropolitan Phoenix - New Homes	2nd Qtr.	96	-5.9	1.1	NA	NA
Metropolitan Phoenix - Resale Homes	2nd Qtr.	109	-10.7	0.9	NA	NA
MORTGAGE INTEREST RATES (Conventional, 30-year, Fixed-rate)						
Maricopa County	July	10.1	-2.9	-2.9	NA	NA
POPULATION ESTIMATES (In Thousands)						
Maricopa County	2nd Qtr.	1,973	0.6	3.7	NA	NA
Arizona	2nd Qtr.	3,442	0.6	3.3	NA	NA
ELECTRICAL POWER SALES (In Millions of Kilowatt Hours)						
Arizona	June	3,782	20.5	6.1	18,484	8.7

NA = Not Applicable

Source: Center for Business Research, College of Business, Arizona State University

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Study of New Businesses/Survey of Their Owners

Entrepreneurs Find Valley Fertile for New Businesses

Entrepreneurs launched new businesses in the Phoenix metropolitan area at a rate of 300 per month during 1986, according to a recent study by the ASU College of Business. Because this count excludes franchised and branch businesses, as well as those that merely reopened or relocated, it is a good gauge of true entrepreneurial activity Valleywide.

Eating establishments were the predominant type of new business in 1986, with auto repair shops and hairstyling salons also popular. More than half of the new businesses were part of either the services or retailing sectors.

The 3,646 business start-ups contributed an estimated 10,000 jobs to Valley employment, about 25 percent of total job growth. This trend is in line with U.S. employment growth, much of which stems from the emergence of new firms, most of them small.

Located primarily in Phoenix (46 percent), the East Valley (31 percent), and Scottsdale (13 percent), the Valley's new businesses tended to cluster by type in various geographic areas. For example, new financial and real estate firms concentrated in south Scottsdale and along East Phoenix's Camelback corridor. New manufacturing firms

See "New Businesses," page 2

In This Issue

10 2nd Qtr. AZ Construction
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15 AZ Leading Index, July
16 AZ Economic Indicators

Quarterly Economic Forecast Update

Economy To Move Forward Through '88

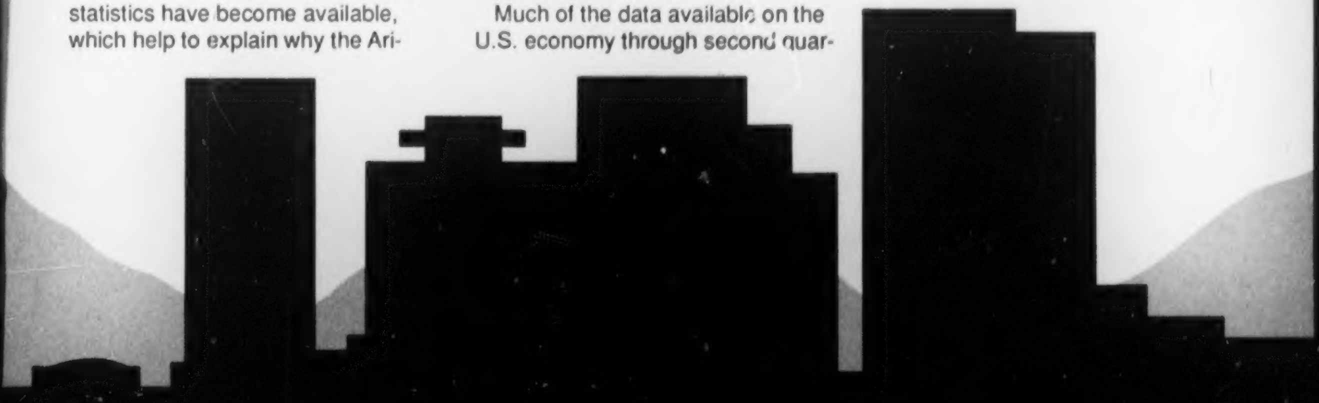
In spite of a variety of discouraging economic statistics, the Arizona economy is expected to grow through the end of 1988. By 1989, however, the probability of a recession increases sufficiently to raise doubts about how long the current economic expansion may be sustained.

In recent weeks, new and revised statistics have become available, which help to explain why the Arizona economy has grown at a slow pace while the national economy has moved ahead with relative alacrity. Some of the causes of Arizona's slower growth can be readily explained; others are not apparent without analysis of recent economic trends.

THE NATIONAL SITUATION

Much of the data available on the U.S. economy through second quarter 1987 portray surprisingly strong activity in light of concern about the stubborn trade and budget deficits. Most of the optimistic forecasts for ongoing expansion were based on the belief that the dollar's continuing

See "Forecast," page 7



ARIZONA BUSINESS

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"New Businesses," from page 1
located most often in south Phoenix and in the north and central sectors of Tempe.

This article further details the study's findings and also reports on the authors' 1986 survey of new business owners in the Phoenix area. The survey revealed that the Valley's typical firm founder was a 40-year-old, Caucasian, married male who already lived in Arizona, had some post-high-school education, and was employed the previous year. This venture, in the services industry,was his first business; however, his prior experience included four different jobs in the industry. He did not study entrepreneurship before starting his firm, and he sought no organizational advice or help.

The typical founder lived in the city of Phoenix, where his home was within three miles of his business. His location choice was based on its nearness to customers and on its reasonable rent. If his firm should branch, he would expand to the East Valley.

The founder was different from his parents in that they did not own a business. Finding skilled employees was easy and accomplished via word-of-mouth. His primary source of financing was personal assets; however, he did obtain a bank loan, after visiting more than one financial institution. His most difficult problems were financing and cash flow.

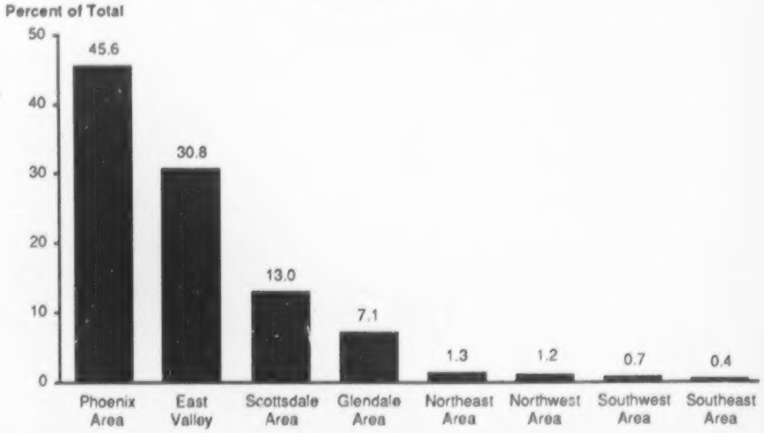
The "Survey Results" section of this article provides additional data and analysis.

TABLE 1
METROPOLITAN PHOENIX BUSINESS START-UPS
1986, By City

City	Number	Percent of Metro Phoenix Total
Ahwatukee	7	0.2
Apache Junction	35	1.0
Avondale	10	0.3
Buckeye	3	0.1
Carefree	9	0.2
Cave Creek	15	0.4
Chandler	122	3.3
Chandler Heights	1	0.0
Deer Valley	1	0.0
El Mirage	7	0.2
Fountain Hills	22	0.6
Gilbert	42	1.2
Glendale	225	6.2
Goodyear	10	0.3
Guadalupe	4	0.1
Higley	1	0.0
Laveen	1	0.0
Litchfield Park	1	0.0
Maricopa	1	0.0
Mesa	495	13.6
Paradise Valley	4	0.1
Peoria	32	0.9
Phoenix	1,655	45.4
Queen Creek	8	0.2
Scottsdale	470	12.9
Sun City	16	0.4
Sun City West	8	0.2
Sun Lakes	3	0.1
Surprise	6	0.2
Tempe	423	11.6
Tolleson	2	0.1
Youngtown	7	0.2
TOTAL	3,646	100.0

Source: Center for Business Research, College of Business, Arizona State University; and *Arizona New Business Review*, published by New Business Publishing, Inc., Phoenix, Ariz.

FIGURE I
METROPOLITAN PHOENIX BUSINESS START-UPS
1986, By Geographic Sector



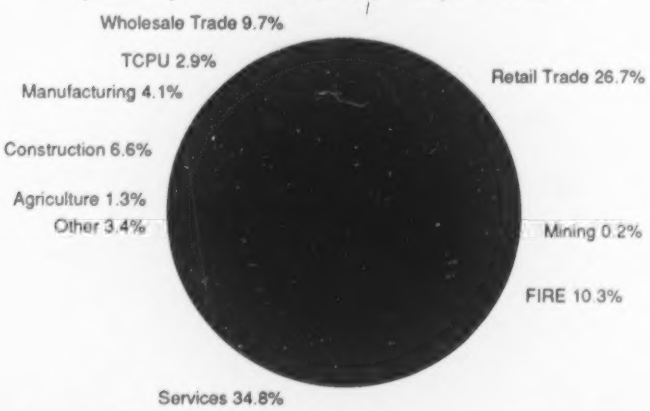
Source: Center for Business Research, College of Business, Arizona State University; and *Arizona New Business Review*, published by New Business Publishing, Inc., Phoenix, Ariz.

METHODOLOGY

The authors obtained data for the study of new business formations through a cooperative arrangement with *Arizona New Business Review*. Each month, the review publishes information on new, relocated and branch businesses in the metropolitan Phoenix area and the state of Arizona. In a typical month, the review lists some 700 newly opened businesses throughout Arizona and their telephone number, address, type of business, and number of employees. The authors recorded a business's opening as the month of its telephone hook-up.

The survey of new firm founders was conducted during spring 1986 in the metropolitan Phoenix area. It was mailed to 1,000 business owners who had started their enterprise one year before, and 232 surveys were completed and returned. The undeliverable surveys (15.9 percent) provide a rough estimate of the number of those businesses that failed, although it is possible that some surveys were forwarded to the owners of failed businesses.

FIGURE II
PERCENTAGE DISTRIBUTION OF BUSINESS START-UPS
By Industry Classification, 1986, Metropolitan Phoenix



Source: Center for Business Research, College of Business, Arizona State University; and *Arizona New Business Review*, published by New Business Publishing, Inc., Phoenix, Ariz.

TABLE 2
INDUSTRY DISTRIBUTION: NEW vs. EXISTING BUSINESSES
Metropolitan Phoenix, by Standard Industrial Classification

SIC*	New Businesses 1986 (%)	Existing Businesses 1985 (%)
Agriculture, Forest, and Fish	1.3	1.7
Mining	0.2	0.3
Construction	6.6	10.4
Manufacturing	4.1	5.5
Transportation, Communications, Public Utilities	2.9	2.6
Wholesale Trade	9.7	7.6
Retail Trade	26.7	21.0
Finance, Insurance, Real Estate	10.3	10.4
Services	34.8	32.6
Other	3.4	7.9
TOTAL*	100.0	100.0
Retail Trade		
General Merchandise and Apparel	2.6	—
Eating and Drinking	6.9	—
Automotive Service and Repair	2.9	—
Food Stores	1.9	—
Other Retail	12.4	—
TOTAL	26.7	—
Services		
Personal Services	5.9	—
Health Services	3.2	—
Business Services	12.0	—
Other Services	13.7	—
TOTAL	34.8	—

*The SIC code was missing from several data entries, resulting in a small discrepancy in the total number of firms when classified by SIC rather than by city or zip code.

Source: Center for Business Research, College of Business, Arizona State University. Data on new businesses are from the *Arizona New Business Review*, published by New Business Publishing, Inc., Phoenix, Ariz. Data on existing businesses are from *County Business Patterns, 1985, Arizona*, published by the U.S. Department of Commerce, Bureau of the Census, March 1987.

STUDY RESULTS

Location of New Firms

Table 1 and Figure I offer a detailed view of the geographic distribution of business start-ups Valley-wide. Leading the 1986 list are Phoenix (1,655), Mesa (495), Scottsdale (470), Tempe (423), Glendale (225), and Chandler (122). These six cities accounted for 93 percent of the new business formations.

Types of New Firms

The authors assigned each new firm a five-digit Standard Industrial Classification (SIC) code number to identify its business type, then analyzed the entire data base to describe the kind of new firm growth that occurred during 1986.

The services sector encompassed the largest number of new businesses, accounting for 34.8 percent of the total (see Figure II). The retail trade sector ranked second, with 26.7 percent. The distribution of new firms by type tends to be similar to the area's existing industrial structure, as set out in the census publication *County Business Patterns* (see Table 2). However, construction firms were slightly underrepresented, and trade firms were overrepresented among new businesses.

Because services and retail trade businesses constitute such a large percentage of start-ups, these two categories are broken down (see Table 3) to give more detail on formation activity. Nearly 7 percent of all new businesses are restaurants or drinking establishments; about 6 percent are various types of personal services businesses; and 12 percent are business services firms of different types.

Examination of business type by zip code shows a tendency for new firms to cluster by type in various areas of the Valley. For example, new finance firms concentrate in south Scottsdale and along east Phoenix's Camelback corridor (zips 85251, 85018, 85016), in Mesa (85202), and in Tempe (85282). New real estate firms tend to locate in east Phoenix (85018, 85016, 85012), south Scottsdale (85251, 85253), and Tempe (85282). Interestingly, no new firms in the finance group were started in predominantly retirement zip code areas such as Sun City, Sun City West, Youngtown, Sun Lakes, and east Mesa.

New construction and manufacturing firms appear to favor the southern portion of the Valley. The former open most often in south and east Phoenix (85040, 85018), north Tempe (85281), and west Mesa (85202, 85204). The latter cluster in south Phoenix (85034, 85040) and in the north and central sectors of Tempe (85281, 85282).

Analysis of the data base also revealed the frequency of particular kinds of formations. Entrepreneurs started restaurants and supper clubs more than twice as often as any other type of business; on average, one new eating establishment opened every business day. Automobile repair and service shops, beauty salons, and real estate agencies followed, with high formation rates. Table 4 lists, by frequency, all of the business categories in which 20 or more new firms formed in 1986.

Timing of New Firm Formation

Business start-up activity in the Phoenix area during 1986 was strongest from January through April and declined from August through December, with low points in September and December (see Figure III). The Center for Business Research will continue to track start-up activity, on a monthly basis, for future comparison.

SURVEY RESULTS

The survey identified characteristics of the entrepreneur who develops an idea into a viable business. It also revealed factors that influence the early decision-making and business start-up processes.

Survey respondents were predominantly male (75 percent) and Caucasian (95 percent). The mean age was 40.8 years for males and 38.5 years for females; the overall mean age was 40.2 years. With increased education, the mean age for starting a business falls rapidly for females but rises for males.

Of the survey respondents who provided such information, 23.8 percent said they had moved to Arizona to found their firm. Sixty-five percent of this group had chosen Arizona because of a perceived business opportunity, while 61 percent selected climate as a factor in their decision, and 31.5 percent migrated in order to be closer to family and friends (see Table 5).

Various writers have pointed out that unemployed people and redundant workers (those with outdated or no-longer-needed skills) sometimes choose to start firms. In this survey, 30.4 percent of the respondents said that they had been unemployed within one year of starting their business.

Founder's Experience

It seems reasonable to postulate that the probability of success for a new business would be enhanced by the owner having previous experience both in starting a firm and in working at different kinds of jobs within the same industry. Of those responding, 58.8 percent said that this formation is their first, while 41.2 percent said they had started other businesses. The mean number of start-ups for those who had launched other firms was 2.46. Of those who were starting a first business, 70.0 percent had previously worked in the industry of the formation, while 30.0 percent had no experience in the industry.

Formal/Informal Education

Two in five respondents had some post-high-school education and one in three had graduated from college or had post-graduate training.

Some educators and writers, drawing on sociological and psychological research on entrepreneurship, believe that entrepreneurial skills can be taught; hence, economic growth could be stimulated by teaching about entrepreneurship. About one in four survey respondents starting their first business indicated that they had studied entrepreneurship. One in five who previously had established firms said they had specifically studied entrepreneurship. Of those who had studied entrepreneurship, 26.4 percent had taken a college course, 3.8 percent had attended a seminar, and 20.8 percent had read about it; 45.2 percent checked more than one of these choices.

Only one in four survey respondents contacted chambers of commerce, the Arizona Department of Commerce, management consult-

TABLE 3
GEOGRAPHIC DISTRIBUTION OF BUSINESS START-UPS
By Standard Industrial Classification (SIC), 1986, Metropolitan Phoenix

	Geographic Sector								
SIC*	*Phoenix*	*East Valley*	*Scottsdale*	*Glendale*	*Northwest*	*Southwest*	*Northeast*	*Southeast*	*Total*
Agriculture, Forest, and Fish	17	15	7	4	1	1	1	0	46
Mining	2	2	1	1	0	0	0	0	6
Construction	105	92	19	19	1	1	2	0	239
Manufacturing	67	54	13	9	3	1	3	0	150
Transportation, Communications, Public Utilities	58	32	11	5	1	0	0	0	107
Wholesale Trade	179	110	38	18	2	3	2	2	354
Retail Trade	405	312	127	83	13	6	20	6	972
Finance, Insurance, Real Estate	172	88	82	19	6	0	4	2	373
Services	599	375	158	90	17	14	12	2	1,267
Other	56	38	18	7	0	1	2	1	123
TOTAL	1,660	1,118	474	255	44	27	46	13	3,637
Retail Trade									
General Merchandise and Apparel	39	29	17	4	1	1	4	0	95
Eating and Drinking	110	78	29	23	4	0	4	3	251
Automotive Service and Repair	48	34	8	9	2	3	1	1	106
Food Stores	25	21	9	9	2	0	3	0	69
Other Retail	183	150	64	38	4	2	8	2	451
TOTAL	405	312	127	83	13	6	20	6	972
Services									
Personal Services	86	74	23	22	5	4	2	0	216
Health Services	50	36	11	10	5	3	1	1	117
Business Services	207	128	72	15	5	5	3	1	436
Other Services	256	137	52	43	2	2	6	0	498
TOTAL	599	375	158	90	17	14	12	2	1,267

*The SIC code was missing from several data entries, resulting in a small discrepancy in the total number of firms when classified by SIC rather than by city or zip code.

Source: Center for Business Research, College of Business, Arizona State University; and *Arizona New Business Review*, published by New Business Publishing, Inc., Phoenix, Ariz.

ants, or other sources of professional advice. Other studies have suggested that such advice is sought more frequently than indicated by this survey.

Similarly, the survey results do not verify the conclusion of sociological studies that entrepreneurs are usually the children of self-employed parents. Only 42 percent of respondents fell into this category, while 58 percent said their parents were not self-employed.

Location/Employees

The survey question regarding specific factors that influenced firm location was developed from lists of factors determined to be important by various business location studies. In order of importance (multiple answers were allowed), respondents chose sites near customers, reasonable rent, nearness to a freeway or a major street, and nearness to home (see Table 6).

Most new business owners (88 percent) said they were able to find employees with the level of skill required for their jobs, with only 12 percent expressing dissatisfaction in this area. While 47 percent found their employees by word-of-mouth, 21 percent used a newspaper advertisement (see Table 7).

Financing

Financing is usually critical to a new business venture. Four in five respondents indicated that the use of personal assets was their most important source of financing (see Table 8). Second most important was bank loans (38.4 percent). Only 6 percent mentioned venture capital funds, and 3 percent had received financing from the Small Business Administration.

A firm founder's probability of receiving a bank loan is significantly enhanced if he/she were employed the previous year (see Table 9). Those in school may have been classified as unemployed, which might explain why recently unemployed people obtained 21.3 percent of the bank loans. Males received 75 percent, consistent with the male/female ratio of survey respondents and suggesting no sex discrimination in awarding loans. The probability of receiving a bank loan is enhanced if the proposed business is the founder's first, but some bias is suspected since 57.5 percent of the formations analyzed in this survey were by founders starting their first firm. Two-thirds of bank loans went

TABLE 4
MOST POPULAR TYPES OF NEW BUSINESS
Metropolitan Phoenix, 1986

Type of Business*	Number
Restaurants & Supper Clubs	211
Automobile Repair & Service Shops	98
Hairstyling Salons	75
Real Estate Agencies	61
Insurance Agencies	52
Retail Clothing Stores	50
Mortgage/Real Estate Loan Companies	42
General Contractors	42
Medical & Surgical Service Organizations	40
Gift Shops	39
Lawyers	38
Accountants	38
Automobile Repair & Paint Shops	37
Real Estate Developers	32
Travel Agencies & Bureaus	31
Printers	31
Business Management Consultants	27
Automobile Dealers - Used Cars	26
Computer (Wholesale) Stores	24
Laundries & Cleaners	24
Phone Communication Services	22
Investment Firms	21
Furniture Dealers, Retail	21
Fingernail & Manicuring Salons	20
Computer Software Stores	20

*Includes only those types with at least 20 start-ups during 1986.

Source: Center for Business Research, College of Business, Arizona State University; and *Arizona New Business Review*, New Business Publishing, Inc., Phoenix, Ariz.

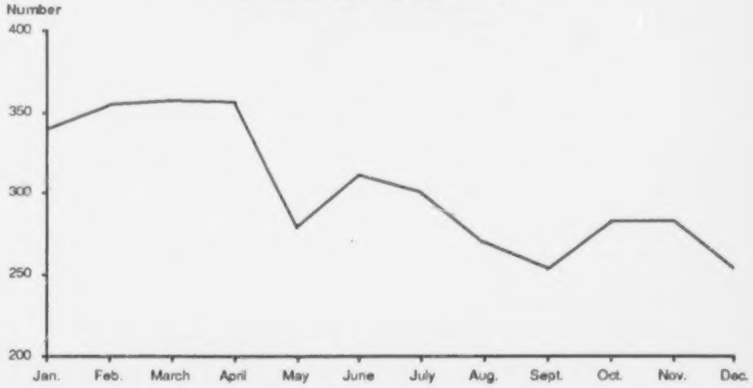
TABLE 5
REASONS FOR CHOOSING ARIZONA AS PLACE TO START BUSINESS

Reason	*Percent**
Business Opportunity	64.8
Climate	61.1
To Be Closer to Family & Friends	31.5
Western Lifestyle	18.5
Outdoor Recreation	13.0
Strength of Local Government (Schools, Parks, Police, Streets, etc.)	7.4
Other Factors	3.7
Proximity to ASU	1.9

*Since respondents could give multiple responses, percentages do not total 100 percent.

Source: Authors' survey of new business owners in the Phoenix metropolitan area, March 1986.

FIGURE III
ANNUAL PATTERN OF BUSINESS START-UPS
Metropolitan Phoenix, 1986



Source: Center for Business Research, College of Business, Arizona State University; and *Arizona New Business Review*, published by New Business Publishing, Inc., Phoenix, Ariz.

to founders who had experience in the industry of the new formation.

Start-up Problems

The survey asked respondents to identify the most difficult problems they faced in establishing their firm (see Table 10). Financing and cash flow were the greatest obstacles, indicated by 30 percent of all respondents. Another 20 percent selected problems related to name identification (becoming known), competition, and advertising.

CONCLUSIONS

The study of 1986 new business formations revealed how entrepreneurial activity is stimulated by consumer and business demand. Metropolitan Phoenix consumers are demanding restaurants, hair salons, automotive service and repair establishments, and agencies to handle real estate and insurance needs. The demand for medical and legal services follows, and all of these types of business create demand for still other business service firms.

The survey analysis described the characteristics of new business owners and their problems and decisions of an economic nature. One in four of the survey respondents is female, which suggests that women are taking on a significant founding/ownership role in metropolitan Phoenix business start-ups. The data suggest that females with a college degree or post-college education are starting businesses at a younger mean age than their male counterparts.

Perhaps the most interesting findings of the research relate to the failure rate of new businesses, which is extremely high. Little is known about the reasons, however, because it is difficult to survey failed firms. Two observations from this research seem especially important to the business death issue. First, 30 percent of the firm founders were unemployed the previous year. Compounding this statistic is the 30 percent who had no experience in the industry of their new business. The unemployed person's propensity to solve his/her unemployment problems with self-employment may provide a preliminary explanation for business failures.

– **Lee R. McPheters,** *Director*
Economic Outlook Center

– **Martha J. Clyde**
Research Associate
Center for Business Research

TABLE 6
SITE LOCATION FACTORS FOR NEW BUSINESSES
Metropolitan Phoenix

Location Factors	*Percent**
Near Customers	53.9
Reasonable Rent	52.6
Near Freeway or Major Street	40.5
Near Home	34.5
Near Suppliers	9.9
Near Similar Businesses	8.2
Other	5.2
Near Airport	4.7
Local Tax Considerations	3.9

TABLE 7
HOW NEW BUSINESS OWNERS FOUND EMPLOYEES

Method	*Percent**
Word of Mouth	47.0
Newspaper Advertising	21.1
Other	20.3
Relatives	15.5
Employment Agency	4.3
Management Consultants	1.3

TABLE 8
HOW SURVEYED FIRMS WERE FINANCED

Method	*Percent**
Personal Assets	81.0
Bank Loans	38.4
Relatives	17.7
Foregone Wages	15.5
Venture Capital	6.0
Friends	3.9
SBA Loans	3.0
Other	3.0

TABLE 9
IMPACT OF SELECTED VARIABLES ON NEW BUSINESS OWNERS' RECEIPT OF BANK LOANS

Variable	*Percent*
Employment Status in Previous Year	
Unemployed (voluntary or involuntary)	21.3
Employed	78.7
Sex	
Male	74.2
Female	25.8
Number of Businesses Formed Previously	
None	56.2
One or more	43.8
Industry Experience Prior to Current Business Formation	
Yes	67.4
No	32.6

TABLE 10
MOST DIFFICULT PROBLEMS ENCOUNTERED IN STARTING A NEW BUSINESS

Problem	*Percent**
Financing and cash flow	29.7
Becoming known, competition, advertising	19.8
Retaining good employees (honest, hard-working, etc.)	14.2
Problems with government, tax compliance, etc.	9.5
Courage to start	3.4
Other	26.3

*Since respondents could give multiple responses, percentages do not total 100 percent.

Source: Authors' survey of new business owners in the Phoenix metropolitan area, March 1986.

"Forecast," from page 1

decline would stimulate U.S. production and exports and, combined with reduced imports, would lower the nation's trade deficit.

As measured by the Federal Reserve Board's trade-weighted index of the value of the U.S. dollar versus 10 major foreign currencies, a considerable decline in the dollar's exchange value has yet to result in significant improvement in the trade deficit. The index (March 1973 = 100) had risen to well over 150 when it peaked in the first quarter 1985; during the next two years, however, the dollar lost more than one-third of its value, falling to less than 100 by second quarter 1987.

Normally, such a steep decline would make imports so costly and American goods so cheap that improvement in the trade deficit would be inevitable. Nevertheless, the trade imbalance remains huge, at an annual rate of almost $150 billion. Exports by U.S. manufacturers have improved somewhat, but American consumers are purchasing imported goods at a record rate.

The national economy also managed to withstand the surge in interest rates that occurred during the early spring. Housing starts, automobile sales and a number of other traditional barometers of economic trends have fallen but remain at reasonably high levels for the maturity of the current expansion.

Overall, the 2.3 percent growth in real GNP recorded during second quarter 1987 exceeded many analysts' expectations, especially considering the first quarter's 4.4 percent growth and the persistently swollen trade deficit. Any optimism that emerged was short-lived, however, as the Federal Reserve Board – responding to fears of a free-falling dollar and subsequent inflation – recently tightened monetary policy. This action drove interest rates up again to a level that would attract the foreign capital required to finance the federal budget deficit.

TABLE 1
1987 AND 1988 ECONOMIC FORECASTS: UNITED STATES

	Actual *1986*	**Forecast** *1987*	**Forecast** *1988*
Gross National Product			
Millions of 1982 Dollars	3,713	3,806	3,916
Percent Change	2.9	2.5	2.9
Industrial Production			
Percent Change	1.0	2.6	3.4
Housing Starts			
Number in Millions	1.82	1.66	1.66
Percent Change	4.4	-8.8	0.0
Unemployment Rate			
Percent	7.0	6.4	6.2
Consumer Price Index			
Percent Change	1.9	3.8	4.6
Three-Month Treasury Bill Rate			
Percent Change	6.0	5.7	6.4

Source: Economic Outlook Center, College of Business, Arizona State University

THE U.S. OUTLOOK

Given the current tenor of the financial markets, the Economic Outlook Center's (EOC) national economic forecast, summarized in Table 1, is somewhat optimistic. The forecast, based on the consensus view of the economy summarized in the *U.S. Blue Chip Economic Indicators* newsletter, envisions the next 15 months as a period of positive (if unspectacular) growth.

Inflation is forecast to approach a 5 percent rate by the end of 1988, barring any oil price shocks related to political tension in the Middle East. With the exception of world oil markets, the pattern of price increases is expected to be orderly and stable for the foreseeable future. Higher prices for imports should be offset somewhat by reduced demand for most consumer goods as U.S. households finally begin to retrench and repay the debt accumulated in recent years.

Although consumption – the major source of U.S. economic growth for much of the current business cycle – will slow, increases in domestic production and output related to an expected improvement in exports should enhance the economy's prospects for growth during 1988. Industrial production in the United States is forecast to increase 2.6 percent in 1987 and 3.4 percent in 1988, substantially more than the anemic 1986 gain of 1 percent. Real GNP growth is projected to average nearly 3 percent in 1988, with much of the gain attributable to the anticipated reduction in the trade balance.

Interest rates, while rising during the forecast period, are projected to remain relatively stable. The money markets, along with the situation in the Middle East, represent the principal risks to the forecast. The forecast assumes that the monetary authorities will exercise sufficient control over financial markets to prevent steep increases in borrowing costs before the national elections in late 1988.

The longevity of the current economic expansion can be attributed to the absence of conditions that usually choke off growth in the late stages of a business cycle. Inflation remains low relative to the 1970s and early 1980s; interest rates have yet to surge to prohibitive levels; and labor and key commodities appear to be in good supply.

By 1989, some of these traditional deterrents to growth may become evident. If corporate profits remain strong, increased wage demands could push inflation higher. Inflation also could be aggravated by higher oil prices, higher import prices and lower productivity as skilled labor becomes scarce in some regions of the country. Interest rates may climb as the confidence of foreign investors in the falling dollar erodes, discouraging business investment and housing construction.

A combination of these developments could bring about a recession by 1989 or 1990. It is possible, not likely, that a recession could begin sooner if conditions in the financial markets deteriorate during the next few months.

TABLE 2
1987 AND 1988 ECONOMIC FORECASTS: ARIZONA

	Actual *1986*	Forecast *1987*	Forecast *1988*
Gross State Product			
Millions of 1982 Dollars	42,901	44,965	47,260
Percent Change	5.2	4.8	5.1
Personal Income			
Millions of Current Dollars	44,719	47,812	51,548
Percent Change	9.3	6.9	7.8
Retail Sales			
Millions of Current Dollars	17,187	18,232	19,474
Percent Change	6.3	6.1	6.8
Unemployment Rate			
Percent	6.9	7.3	7.0
Wage and Salary Employment			
Number in Thousands	1,341.4	1,387.5	1,443.6
Percent Change	4.9	3.4	4.0
Population			
Number in Thousands	3,332	3,440	3,542
Percent Change	4.1	3.2	3.0
New Single Family Housing Units Permitted			
Number	34,079	28,618	29,010
Percent Change	2.4	-16.0	1.4
New Multifamily Housing Units Permitted[1]			
Number	27,008	10,050	10,620
Percent Change	-27.2	-62.8	5.7

[1] Apartment complexes of three or more units

TABLE 3
1987 AND 1988 ECONOMIC FORECASTS: MARICOPA COUNTY

	Actual *1986*	Forecast *1987*	Forecast *1988*
Consumer Price Index			
Percent Change	1.3	4.3	5.5
Retail Sales			
Millions of Current Dollars	11,342	12,052	12,904
Percent Change	4.7	6.3	7.1
Unemployment Rate			
Percent	5.6	6.2	6.0
Wage and Salary Employment			
Number in Thousands	883.5	915.4	954.6
Percent Change	4.9	3.6	4.3
Population			
Number in Thousands	1,902	1,970	2,035
Percent Change	4.9	3.6	3.3
New Single Family Housing Units Permitted			
Number	23,851	19,384	19,810
Percent Change	3.1	-18.7	2.2
New Multifamily Housing Units Permitted[1]			
Number	18,311	7,170	7,590
Percent Change	-32.9	-60.8	5.9

[1] Apartment complexes of three or more units

Source (Tables 2 and 3): Economic Outlook Center, College of Business, Arizona State University

1987-1988 ARIZONA FORECAST

The Arizona economy, which led the nation in employment growth for three consecutive years, no longer is growing at the explosive pace that residents now take for granted. On a seasonally adjusted basis, employment has been flat or falling for several months. At the mid-point of 1987, non-agricultural employment in the state was below the level recorded at the end of 1986. Nationally, employment expanded more than 2 percent per year during the first two quarters of 1987.

The personal income statistics provide more evidence of a weakening economy. During first quarter 1987 (the latest statistics available), Arizona personal income rose 1.8 percent, barely more than the 1.7 percent gain nationally.

The current forecasts for Arizona and Maricopa County, summarized in Tables 2 and 3, reflect a conservative view of the state's near-term growth prospects. Although some improvement is expected during 1988, Arizona will become increasingly vulnerable to a downturn if U.S. economic performance begins to falter.

Personal Income

The most recent 1986 Arizona personal income statistics were much stronger than the preliminary estimates suggested. The 9.3 percent gain posted last year compared favorably with the income growth reported during earlier years of the economic expansion. However, employment and population increases, major contributors to the rapid income growth of prior years, have slowed substantially this year. Accordingly, the Economic Outlook Center expects Arizona personal income to rise 6.9 percent in 1987 and 7.8 percent in 1988, the smallest gains since the 1981-1982 recession. Even so, much of the anticipated increase will be attributable to higher inflation rather than to significant growth in real income.

Inflation and Retail Sales

Retail sales in the Phoenix metropolitan area were unusually weak in 1986. While sales rose 6.3 percent statewide, Maricopa County experienced an increase of only 4.7 percent. This year, the EOC expects a normal pattern to prevail, with the Phoenix area commanding its customary share – about two-thirds – of Arizona retail sales.

Barring a sudden collapse in consumer spending, improvement in the sales totals can be expected this year. The Center forecasts Maricopa County retail sales to grow 6.3 percent in 1987 and 7.1 percent in 1988, with respective increases of 6.1 percent and 6.8 percent for the state as a whole. This scenario is consistent with retail sales totals recorded to date this year.

Along with stronger spending, higher inflation should contribute to the anticipated gains in retail sales in 1987 and 1988. As measured by the Metropolitan Phoenix CPI, prices increased about 4.2 percent in Maricopa County from mid-1986 to mid-1987. The forecast for all of 1987, unchanged from last quarter, calls for an increase of 4.3 percent. By 1988, inflationary pressures will build slightly, pushing the Metropolitan Phoenix CPI upward by an average of 5.5 percent during the year.

Population and Labor Force

Midyear estimates indicate that the Arizona labor force barely grew since June 1986, partial evidence of the slower rate of population growth, particularly in the Phoenix area. Economists expected this decline as a response to the modest economic gains since early 1986.

Although the EOC has reduced its population projections from the prior forecast, migration to Arizona still is expected to remain strong relative to other states. As Figure I illustrates, despite weak expansion of job opportunities, smaller population and labor force gains should result in a stable unemployment rate in the state through 1988. Unless employment growth improves substantially, the Arizona unemployment rate is expected to exceed the national rate for the duration of the forecast period.

Employment

Population growth in Arizona responds to ebbs and flows in the rate of job creation (see Figure II). Preliminary estimates indicate that em-

FIGURE I
UNEMPLOYMENT RATES
United States, Arizona and Maricopa County
Percent of the Labor Force

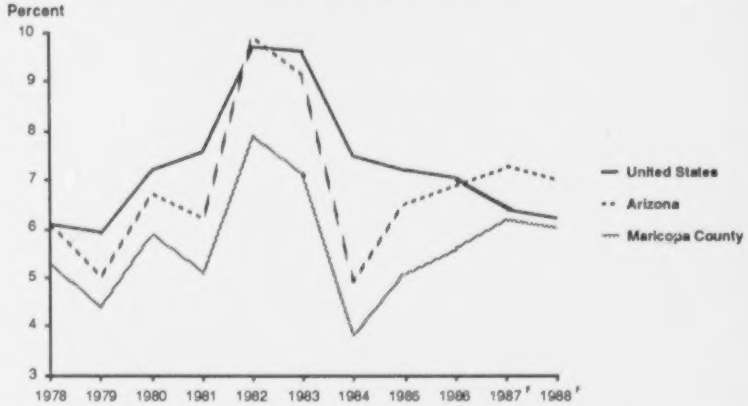


FIGURE II
ARIZONA EMPLOYMENT AND POPULATION GROWTH RATES
1980-1988, Percent Change from Previous Year

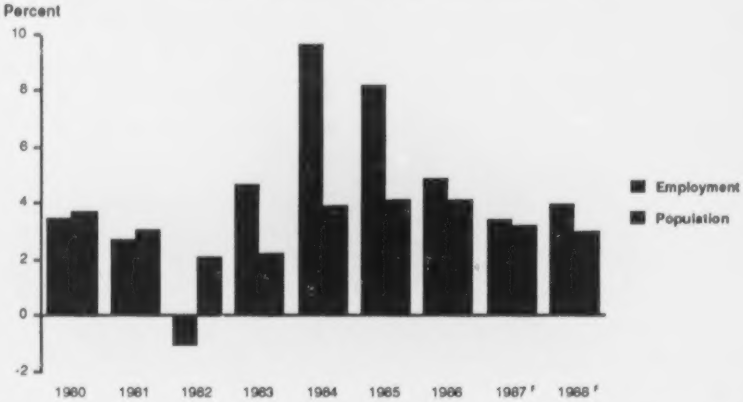
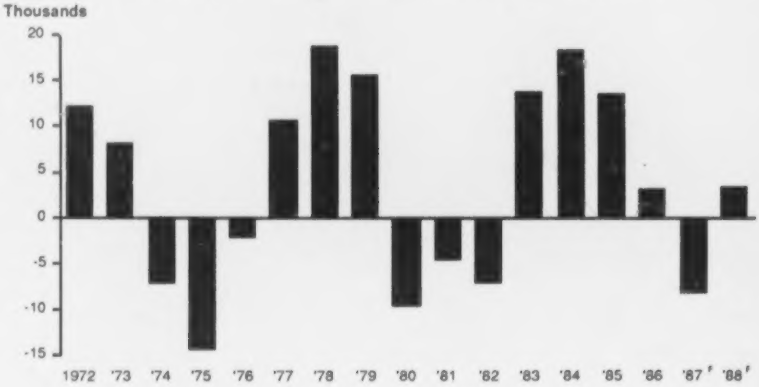


FIGURE III
ARIZONA CONSTRUCTION EMPLOYMENT
1972-1988, Net Change from Previous Year, In Thousands



ᶠ Forecast

Source (Figures I, II and III): Arizona Department of Economic Security; and Economic Outlook Center, College of Business, Arizona State University.

ployment increased only 1.4 percent during the 12 months ending July 1987, the weakest growth since the 1981-1982 recession.

Forecasted growth of 3.4 percent in 1987 and 4.0 percent in 1988 may appear unrealistic; in fact, a key factor in the forecast, the projected rebound in high technology manufacturing, has yet to materialize. However, a better performance by the state economy in the next 15 months, combined with expected upward revisions to the preliminary data, should make the forecasts reasonably accurate.

Construction

Much of the weakness in the job situation can be explained by the precipitous plunge in construction employment that has unfolded since July 1986. Nearly 13,000 jobs disappeared during the subsequent 12 months. Figure III shows the fluctuation in Arizona construction employment during previous business cycles.

The EOC predicts that the current building slump will not be as severe as those of the 1970s and early 1980s. If, as expected, interest rates remain relatively stable, population flows continue, and absorption of existing structures improves, construction should be on the rise again in 1988.

However, when the sharp declines of recent months are taken into account, it will take significant improvement by the end of 1987 to prevent the current forecast from being too optimistic. If mortgage interest rates continue to rise rapidly, as they did in early September, housing construction may fall off even more than indicated in Tables 2 and 3.

Risks to the Outlook

Uncertainties in the current forecast stem from three sources: the U.S. trade deficit, rising interest rates, and reductions in defense spending. Should the decline of the dollar fail either to stimulate U.S. exports sufficiently or to curtail demand for imported electronic components, the recovery of Arizona's high technology manufacturing sector may not proceed as anticipated, inhibiting growth in employment and personal income.

A related concern is the course interest rates will take in the months ahead. The forecast assumes a gradual rise in their general level. If foreign investors begin to balk at holding U.S. dollar-denominated assets that are losing value as the dollar drifts downward, higher interest rates will be necessary to maintain foreign capital flows; of course, Arizona's ailing construction industry will suffer.

Changes in planned defense expenditures already have caused layoffs and deferred hiring by the state's durable goods aerospace and aircraft producers. If the federal procurement budget is cut further, even fewer manufacturing jobs will be available than currently forecast.

SUMMARY

While the Arizona economy is weaker than it has been in several years, a recession is unlikely before 1989. Conversely, the probability is low that growth rates comparable to the 1983-1986 experience will be observed anytime soon. In the absence of the potential negative developments outlined above, the Arizona economy probably will grow at a relatively slow pace through the end of 1988.

– **Brian Cary,** *Economist*
Economic Outlook Center

Major Projects Push Construction Forward in Second Quarter

Spurred by the authorization of several major projects in Maricopa County during the second quarter, Arizona construction activity increased to $1.4 billion (25,582 permits) from $1.2 billion (24,041 permits) in the first quarter. Total activity for the state was down slightly from one year earlier, when the dollar value was $1.5 billion (30,411 permits). Total construction activity for the first half of 1987 was $2.6 billion, in contrast to $2.9 billion for the first two quarters of 1986. While no sector dominated the industry, large projects (high dollar value) were the major focus of development during the second quarter. For example, in Phoenix, only six permits, totaling $152 million, represented 36 percent of the $425.7 million recorded for the quarter.

Construction activity in Maricopa County represented 76 percent ($1.1 billion) of Arizona's total dollar value and 63 percent (16,133 permits) of the total issued permits. Development activity in Pima County accounted for 11 percent ($151 million) of the state's total dollar value and 13 percent (3,532 permits) of the permits issued.

More than 85 percent of all construction activity occurred in the 12 reporting units listed in Table 1. Most of the units followed the basic pattern of increased activity over first quarter totals, with significant improvement in cities such as Phoenix ($276 million to $426 million) and Chandler ($52 million to $80 million). Scottsdale, however, reported a decrease from $203 million to $162 million.

SECTORAL ACTIVITY

Residential

During the first few weeks of the second quarter, interest rates rose sharply. For example, the interest rate on a 30-year conventional mortgage jumped from 9 percent to 10.5 percent. As a result, Maricopa County permitted only 5,217 single family homes, which is comparable to the 5,242 units authorized in the first quarter but well below the 7,565 homes permitted one year earlier. In the first half of 1986, 13,622 single family permits were issued, while only 10,459 permits were recorded for the comparable period of 1987. In comparison to second quarter 1986, several cities had significant declines in activity, including Chandler (819 to 244 permits) and Glendale (737 to 333 permits). Only Gilbert reported an increase, from 264 to 303 permits.

With 1,147 permits issued in the second quarter, single family activity in Pima County improved slightly over that of the first quarter (1,132 permits) but was down from one year earlier (1,631 permits). As in the past, more than 70 percent of the permitted homes were in the unincorporated areas of the county.

Unlike the metropolitan counties, other areas of the state reported improvement in single family activity, to 1,484 permits from 1,178 permits in the first quarter and from 1,459 permits recorded for second quarter 1986. Areas that improved over the first quarter were Lake Havasu City (120 to 132 permits), unincorporated Santa Cruz County (36 to 132 permits), and unincorporated Yavapai County (145 to 244 permits).

TABLE 1
REPORTING UNITS WITH GREATEST TOTAL VALUE OF BUILDING PERMITS
Second Quarter, 1987

Reporting Unit	Value *(in millions)*
Phoenix	$425.7
Scottsdale	161.5
Mesa	137.1
Unincorporated Maricopa County	87.4
Chandler	80.4
Unincorporated Pima County	75.0
Tucson	71.1
Peoria	47.2
Tempe	46.8
Glendale	40.1
Gilbert	36.7
Unincorporated Yavapai County	20.0

Source: Center for Business Research, College of Business, Arizona State University

Commercial

The office building sector, with 90 permits ($165 million) in Maricopa County, sharply rebounded from the $87 million recorded in the first quarter and the $53 million permitted one year earlier. The reported dollar value is near the record $168 million (128 permits) of second quarter 1985. The fundamental difference is that nearly 70 percent of the second quarter 1987 dollar value is attributable to only four permits ($115 million) issued in Phoenix. One permit was for $75 million. Three Tempe permits had a total value of $11 million, and Mesa issued five permits, together worth $2.2 million. As shown in Table 2, the office building sector in Pima County declined to $4 million (13 permits) from $14.7 million (17 permits) in the first quarter. For the rest of Arizona, only the city of Yuma reported significant office building activity, with five permits issued ($1.3 million).

Activity in the state's hotel/motel sector increased to 25 permits ($52 million) from four permits ($36 million) in the first quarter. Phoenix was the leading area, with 17 permits ($38 million) and one permit valued at $25 million. Other active areas included Mesa (one permit, $4.5 million), Paradise Valley (two permits, $2.4 million), and unincorporated Pima County (one permit, $1.6 million).

The apartment sector in Maricopa County continued its sharp decline during the second quarter, dropping to 1,264 authorized units from 1,778 units in the first quarter and 6,413 units in second quarter 1986. For second quarter 1987, the primary areas of activity were Mesa (501 units) and Phoenix (346 units). Pima County reported only 238 units (180 units in unincorporated areas), down from the 822 units permitted in the first quarter and the 1,732 units authorized one year earlier. Only 140 units were permitted for the rest of the state, with 118 units located in Kingman.

The retail sector continued to post quarterly declines, with 183 permits ($63 million), in contrast to 216 permits ($73 million) for the first quarter and 414 permits ($87 million) for second quarter 1986. The leading

TABLE 2
KEY SECTOR CONSTRUCTION ACTIVITY
(Second Quarter 1987, First Quarter 1987, and Second Quarter 1986)

			COMMERCIAL							
	SINGLE FAMILY		APARTMENTS[a]		OFFICE BUILDINGS[b]		RETAIL STORES[c]		INDUSTRIAL	
	Number of Permits	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*
Maricopa County										
Second Quarter 1987	5,217	434,060	64	50,191	90	165,161	183	63,579	72	45,474
First Quarter 1987	5,242	430,044	104	63,779	70	86,940	216	73,363	47	30,512
Second Quarter 1986	7,565	500,722	381	169,922	87	53,292	414	86,646	107	37,291
Pima County										
Second Quarter 1987	1,147	70,716	13	8,058	13	4,105	23	15,244	14	2,778
First Quarter 1987	1,132	73,017	48	19,717	17	14,712	27	16,615	6	1,157
Second Quarter 1986	1,631	111,040	57	48,568	25	8,699	36	12,452	8	3,636
Rest of Arizona										
Second Quarter 1987	1,484	93,903	11	3,287	33	4,436	61	10,065	18	1,765
First Quarter 1987	1,178	69,650	13	4,497	19	1,510	69	11,931	23	3,971
Second Quarter 1986	1,459	76,136	9	1,694	46	5,791	73	9,386	19	1,088
Arizona Total										
Second Quarter 1987	7,848	598,679	88	61,536	136	173,702	267	88,888	104	50,017
First Quarter 1987	7,552	572,711	165	87,993	106	102,622	312	101,909	76	35,640
Second Quarter 1986	10,655	687,898	443	220,184	158	67,783	523	108,485	134	42,016

[a] Five or more housing units

[b] Office, bank, medical and professional buildings

[c] Shopping centers and other mercantile buildings

Source: Center for Business Research, College of Business, Arizona State University

areas of retail development were Phoenix (59 permits, $21 million), Mesa (16 permits, $11.8 million), and Scottsdale (6 permits, $8.2 million). Retail development remained fairly stable in Pima County (23 permits, $15 million), where most of the activity was in Tucson (15 permits, $11.8 million). For the rest of Arizona, both the number and value of permits declined slightly (61 permits, $10 million) from the first quarter totals (69 permits, $12 million). Primary areas of development were Bullhead City (six permits, $3 million) and Yuma (two permits, $1.3 million).

Industrial

Maricopa County reported its best quarter for industrial development (72 permits, $45.4 million) since first quarter 1986 (77 permits, $50 million). However, the second quarter pace of development was still well below the record year 1985. Chandler, with five permits ($14.9 million), was the most active area, followed by Phoenix (37 permits, $10.8 million) and Goodyear (two permits, $8 million).

Pima County's industrial activity improved to 14 permits ($2.8 million) from six permits ($1.2 million) in the first quarter. Most of the activity occurred in the unincorporated areas of the county (eight permits, $2.5 million). Statewide, no other area reported industrial activity in excess of $1 million.

Other

Construction of new educational facilities led this diverse sector, with projects valued at $43 million, in contrast to $21 million for the first quarter. Areas of educational activity included unincorporated Yuma County ($14 million), Peoria ($5 million), Tucson ($3 million), and Casa Grande ($3.5 million). Chandler issued one permit, valued at $27 million, for a water treatment plant. Construction of health care facilities continued to be slow, with only seven permits, worth $11.6 million. Most of this activity was in Phoenix (three permits, $6 million) and Mesa (one permit, $5.5 million).

LOOKING AHEAD

While total construction activity remained at a relatively high level through the first half of 1987, the primary focus has been on the development of large-scale projects. These projects tend to have multiyear horizons – many will not open until 1989 – meaning that many developers are looking beyond 1987, even 1988, for potential markets. Thus, development activity is being paced not by existing market forces but by future expectations.

While construction activity appears to be strong, concern exists about whether the pace can be sustained. Several factors appear to foreshadow declining activity for the remainder of the year. First, the single family sector was expected to lead development activity, in response to a growing population and lower interest rates. With the sudden upward movement in interest rates, affordability once again has become a concern. Although interest rates have stabilized around 10 percent, there is no force that will stimulate this sector much beyond the current levels of activity.

Even in an area that has great growth potential, the extent to which

TABLE 3
ARIZONA HOUSING UNITS AUTHORIZED
Second Quarter 1987

	One Family	*Mobile Homes*	*Duplex*	*3-4 Family*	*5 or More*	*Total*
APACHE COUNTY	41	35	0	0	0	76
Percent Change, Previous Year	11	250	-	-	-	62
Percent Change, Previous Qtr.	242	192	-	-	-	217
COCHISE COUNTY	137	133	0	8	0	278
Percent Change, Previous Year	-1	46	-	0	-	13
Percent Change, Previous Qtr.	16	93	-	-	-	45
COCONINO COUNTY	190	95	4	0	0	289
Percent Change, Previous Year	-13	-24	-33	-	-	-21
Percent Change, Previous Qtr.	51	64	-	-	-	57
GILA COUNTY	69	65	0	0	6	140
Percent Change, Previous Year	-15	0	-	-	-	-7
Percent Change, Previous Qtr.	0	35	-	-	-	20
GRAHAM COUNTY	15	46	0	0	0	61
Percent Change, Previous Year	-21	-18	-	-	-	-19
Percent Change, Previous Qtr.	7	12	-	-	-	-31
GREENLEE COUNTY	0	0	0	0	0	0
Percent Change, Previous Year	-	-	-	-	-	-
Percent Change, Previous Qtr.	-	-	-	-	-	-
LA PAZ COUNTY	1	17	0	0	0	18
Percent Change, Previous Year	-	-	-	-	-	-
Percent Change, Previous Qtr.	-88	-71	-	-	-	-73
MARICOPA COUNTY	5,217	353	6	42	1,264	6,882
Percent Change, Previous Year	-31	-8	-96	-74	-80	-53
Percent Change, Previous Qtr.	0	-23	-85	-56	-29	-10
MOHAVE COUNTY	299	199	0	4	118	620
Percent Change, Previous Year	57	-18	-	0	-	41
Percent Change, Previous Qtr.	4	-35	-	33	281	-1
NAVAJO COUNTY	134	36	0	4	0	174
Percent Change, Previous Year	-4	20	-	-	-	3
Percent Change, Previous Qtr.	165	71	-	-	-	129
PIMA COUNTY	1,147	38	22	12	238	1,457
Percent Change, Previous Year	-30	-93	22	-29	-86	-63
Percent Change, Previous Qtr.	1	-78	-45	-25	-71	-30
PINAL COUNTY	88	127	0	0	0	215
Percent Change, Previous Year	-46	-42	-	-	-	-45
Percent Change, Previous Qtr.	-7	18	-	-	-	0
SANTA CRUZ COUNTY	136	3	0	0	0	139
Percent Change, Previous Year	700	-25	-	-	-	276
Percent Change, Previous Qtr.	278	0	-	-	-	202
YAVAPAI COUNTY	385	116	2	87	16	606
Percent Change, Previous Year	-11	-38	-93	278	-75	-18
Percent Change, Previous Qtr.	50	-13	-96	142	-75	20
YUMA COUNTY	52	48	0	0	0	100
Percent Change, Previous Year	-45	-58	-	-	-	-52
Percent Change, Previous Qtr.	-53	-67	-	-	-	-67
TOTAL, ARIZONA	7,911	1,311	34	157	1,642	11,055
Percent Change, Previous Year	-28	-36	-85	-28	-80	-48
Percent Change, Previous Qtr.	5	-20	-64	-6	-41	-10

Note: A dash indicates that a percent change could not be calculated because at least one period had no activity.

Source: Center for Business Research, College of Business, Arizona State University

major development can be undertaken is limited. Thus, the number of major projects that will be permitted should decrease over the rest of the year.

The final factor that will affect all aspects of construction is the outlook for the Arizona economy. For the past few years, the economy has grown at a rapid rate, greatly exceeding national economic growth. In the last few months, however, this growth has slowed considerably, to a rate less than that of the national economy. The state's economy will continue to grow but at a somewhat slower pace, which will affect the level of new construction throughout Arizona and especially in Maricopa County.

The current year continues to be a good one, not a great one, for the construction industry. No strong forces are evident that would propel the industry to new levels in the next year. Basically, expectations continue that construction activity will be slow as developers carefully examine the current and, especially, the future strengths and weaknesses of the market.

– Jay Q. Butler

Dr. Butler is Associate Professor of Real Estate and Director of the Arizona Real Estate Center in the ASU College of Business.

TABLE 4
ARIZONA BUILDING PERMITS
Second Quarter 1987

	Residential*		Commercial		Industrial		Other		Total	
	Number of Permits	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*	*Number of Permits*	*Dollar Value (000)*
APACHE COUNTY	98	3,203	4	214	0	0	8	64	110	3,481
Percent Change, Previous Year	42	47	-43	-15	-	-	33	-80	34	36
Percent Change, Previous Qtr.	283	311	300	-14	-	-	100	327	244	233
COCHISE COUNTY	460	10,332	20	1,496	0	0	252	645	732	12,473
Percent Change, Previous Year	14	3	11	-30	-	-	31	-78	19	-16
Percent Change, Previous Qtr.	38	41	-9	-24	-	-	33	-61	33	13
COCONINO COUNTY	481	16,617	47	2,056	2	525	135	544	665	19,742
Percent Change, Previous Year	-8	6	194	-63	0	672	-6	-82	-3	-29
Percent Change, Previous Qtr.	84	53	21	27	100	1,584	39	-59	67	43
GILA COUNTY	255	5,871	17	563	0	0	71	3,740	343	10,174
Percent Change, Previous Year	-6	0	56	-5	-	-	54	496	4	43
Percent Change, Previous Qtr.	24	12	-48	-82	-	-	65	3,043	20	19
GRAHAM COUNTY	117	1,774	14	389	1	8	31	324	163	2,495
Percent Change, Previous Year	-4	-13	180	164	-	-	94	778	14	12
Percent Change, Previous Qtr.	11	15	17	-66	0	-84	288	1,925	29	-10
GREENLEE COUNTY	0	0	0	0	0	0	0	0	0	0
Percent Change, Previous Year	-	-	-	-	-	-	-	-	-	-
Percent Change, Previous Qtr.	-	-	-	-	-	-	-	-	-	-
LA PAZ COUNTY	59	471	5	668	2	216	16	54	82	1,409
Percent Change, Previous Year	392	1,470	400	1,453	-	-	433	360	413	1,558
Percent Change, Previous Qtr.	-54	-69	-58	46	-	-	-63	-58	-55	-34
MARICOPA COUNTY	7,944	490,216	633	352,622	72	45,474	7,484	196,473	16,133	1,084,785
Percent Change, Previous Year	-19	-6	-34	6	-33	22	-7	11	-15	2
Percent Change, Previous Qtr.	-6	9	5	24	53	49	10	81	5	21
MOHAVE COUNTY	884	22,761	43	8,428	5	320	403	3,335	1,335	34,844
Percent Change, Previous Year	-8	62	85	190	25	12	-6	80	-6	83
Percent Change, Previous Qtr.	-7	3	2	230	-38	-89	38	34	3	16
NAVAJO COUNTY	318	10,719	7	456	1	18	52	267	378	11,460
Percent Change, Previous Year	0	51	-61	-27	-50	-94	-33	-67	-9	30
Percent Change, Previous Qtr.	174	206	-36	-47	-	-	271	154	166	169
PIMA COUNTY	1,849	78,926	86	32,496	14	2,778	1,583	37,221	3,532	151,421
Percent Change, Previous Year	-37	-32	-35	-58	75	-24	-16	-31	-29	-40
Percent Change, Previous Qtr.	-5	-1	-16	-37	133	140	4	27	-1	-6
PINAL COUNTY	321	9,345	40	7,127	1	133	126	5,392	488	21,997
Percent Change, Previous Year	-36	-13	150	219	-	-	-59	74	-40	37
Percent Change, Previous Qtr.	-2	10	14	532	0	-56	-30	446	-10	102
SANTA CRUZ COUNTY	145	8,400	2	26	2	220	18	111	167	8,757
Percent Change, Previous Year	282	432	0	-93	100	54	80	-65	221	282
Percent Change, Previous Qtr.	254	342	-67	-91	-	-	800	122	234	293
YAVAPAI COUNTY	775	30,211	58	5,761	2	164	255	2,717	1,090	38,853
Percent Change, Previous Year	-12	-4	26	15	-33	8	-42	-5	-20	-2
Percent Change, Previous Qtr.	40	56	14	-37	-33	-5	25	34	34	26
YUMA COUNTY	176	5,338	26	5,019	2	161	160	16,149	364	26,667
Percent Change, Previous Year	-44	-41	30	-2	0	118	1	577	-27	60
Percent Change, Previous Qtr.	-55	-50	73	171	-33	40	-38	864	-45	86
TOTAL, ARIZONA	13,882	694,184	1,002	417,321	104	50,017	10,594	267,026	25,582	1,428,548
Percent Change, Previous Year	-19	-7	-22	-4	-22	19	-10	6	-18	-3
Percent Change, Previous Qtr.	0	11	2	16	37	40	16	58	6	20

*Includes mobile homes

Note: A dash indicates that a percent change could not be calculated because at least one period had no activity.

Source: Center for Business Research, College of Business, Arizona State University

Growth Tempo Quickens for August Purchasing Indicators

The Arizona economy grew at a faster tempo in August. All purchasing indicators were positive, and both new orders received and production increased at a rate almost twice as great as in July. Arizona firms added to inventory in August, following July's slight decline. The only negative note is that prices increased at the highest monthly rate in more than three years.

After a summer pause, the Arizona economy now is back on the growth track and seems to be picking up steam. New order and production growth will continue over the balance of the year, boosting the economy to new, higher performance levels. The only major concern is that the rate of inflation is intensifying and may become a real problem for Arizona firms by year end.

PRICES

Prices paid for purchased goods and services registered their highest monthly increase rate in more than three years (since June 1984), as inflationary pressures continue to build. This speed-up in inflation likely will continue over the balance of the year, as increased operating rates cause spot shortages, and rising interest rates translate into higher production costs.

DELIVERY TIME

Delivery time on shipments from vendors stretched at the same rate as in July, signifying an expanding economy.

INVENTORY LEVELS

Inventory levels of purchased materials rose in August, after a slight decrease in July (the only decline so far this year). While the inventory buildup is not robust, it does create a source of demand, adding further substance to the expansion.

NEW ORDERS

New orders received by Arizona firms advanced in August at a much faster clip than in July (the August increase rate was twice as great). The strength shown in new order increases each month so far this year likely will continue over the balance of the year.

PRODUCTION

Production also increased at a much higher rate than in July. The production increase rate now is back up to the healthy levels recorded during the first half of 1987.

EMPLOYMENT

Employment grew in August but at a somewhat lower rate than in July. This was the eighth consecutive monthly gain and is a convincing sign that the Arizona economy is enjoying faster growth.

PURCHASES

Purchases of materials and supplies increased again in August and at a somewhat higher rate than in July. The purchases indicator has improved steadily during 1987, as needed to support the higher production levels.

– Harold Fearon

Dr. Fearon is the National Association of Purchasing Management Professor in the ASU College of Business.

Arizona Purchasing Survey

Now in its 25th year of monthly reporting, Dr. Harold Fearon's survey of Arizona business conditions utilizes data gathered at the close of each month from members of the purchasing management associations of Arizona and southern Arizona. They indicate the direction - higher, unchanged, or lower - of seven key measures of economic activity in the month just ended. These purchasing managers deal daily with supply, demand, and price factors in the marketplace; their aggregate readings have accurately charted the state's economic course for two decades, providing timely data on turning points.

TABLE 1
AUGUST PURCHASING SURVEY

	Percent of Purchasing Managers Indicating Each Response (August compared to July)		
Key Indicators	*Higher*	*Same*	*Lower*
Prices paid for major commodities	44	54	2
Delivery time from vendors	34	59	7
Purchased materials inventory level	30	47	23
New orders received	47	35	18
Production	42	43	15
Employment	27	58	15
Purchases	48	30	22

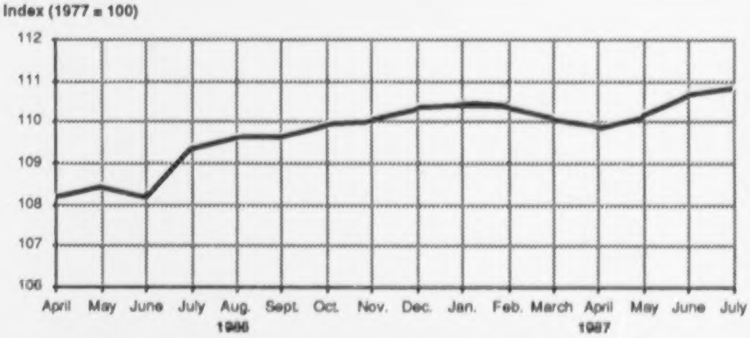
Source: Purchasing Management Association of Arizona and the Purchasing Management Association of Southern Arizona

Arizona Leading Index Forebodes Still Slower Growth

The Arizona Index of Leading Economic Indicators advanced in July, marking three consecutive monthly gains. The July index rose to 110.9, an increase of .2 percent from June's 110.7 (see Figure I).

The index peaked in January, then fell for three months before entering its current upward swing. The July level of 110.9 is a new high for the index, although it is only a .4 percent advance over the January level of 110.5. The relatively modest growth in the Arizona index since summer 1986 has been accompanied by slower job creation, at a rate below that of the nation as a whole for the first half of 1987.

FIGURE I
ARIZONA INDEX OF LEADING ECONOMIC INDICATORS



Source: Economic Outlook Center, College of Business, Arizona State University

INDEX COMPONENTS

Although the index rose in July, six of the 10 components declined. Four of the five components derived from a survey of Arizona purchasing managers were down in July on a seasonally adjusted basis: delivery times, inventory levels, new orders, and production. The fifth component, employment, registered an increase. However, initial unemployment insurance claims also rose, creating a negative influence on the index. The money supply fell for the third consecutive month, its fifth decline in the last six months.

The greatest positive contribution to the index came from a rise in the value of residential building permits, which grew for the second consecutive month after three months of decline. Other positive influences were an increase in the manufacturing workweek and the acceleration of sensitive prices, a national indicator.

TABLE 1
NET CONTRIBUTION OF INDIVIDUAL COMPONENTS TO THE ARIZONA INDEX OF LEADING ECONOMIC INDICATORS

	Net Contribution[+]			
	April	*May*	*June*	*July*
Delivery Time*	.01	-.04	.17	-.09
Inventory Levels*	-.08	.04	.03	-.08
New Orders*	-.05	.01	.10	-.10
Production*	-.04	.02	.01	-.07
Employment*	.00	-.04	.04	.03
Residential Building Permits	-.07	-.01	.12	.27
Unemployment Insurance Claims	.03	.04	-.05	-.01
Average Workweek, Manufacturing	-.09	.21	-.09	.07
Money Supply	.02	-.13	-.12	-.01
Change in Sensitive Materials Prices	.00	.14	.21	.10
OVERALL INDEX CHANGE (%)	-.2	.3	.5	.2

[+] The net contribution of each component is calculated by multiplying the monthly percent change in its index by its relative importance.

*Based on indicators from the purchasing management associations of Arizona and southern Arizona.

Source: Economic Outlook Center, College of Business, Arizona State University

OUTLOOK

With positive growth recorded for only four components, the diffusion computation (percent of components that are positive) yields a value of 40, usually associated with recessionary periods. However, the continuing upward movement of the index provides no basis for a recessionary warning, in spite of meager month-to-month gains.

At this time in 1986, the index was up 2.6 percent for the year, foretelling sluggishness for 1987. It may be worth underscoring that the index this year has risen only .4 percent since January. While this increase signals positive growth for 1988, the pace of that advance may be even slower than in 1987.

– **Lee R. McPheters,** *Director*
Economic Outlook Center

ARIZONA ECONOMIC INDICATORS

	Month or Quarter	Value	Percent Change from Previous Period	Percent Change from Year Ago	Year-to-Date	
					Value	Percent Change from Year Ago
GROSS STATE PRODUCT (In Billions of Dollars, at Annual Rate)						
Arizona - Current Dollars	1st Qtr.	55.267	4.1	8.8	NA	NA
Arizona - 1982 Dollars	1st Qtr.	47.310	3.4	5.8	NA	NA
CONSUMER PRICE INDEX (1977 = 100)						
Metropolitan Phoenix	2nd Qtr.	200.7	1.4	4.2	NA	NA
INDEX OF LEADING ECONOMIC INDICATORS (1977 = 100)						
Arizona	July	110.9	0.2	1.4	NA	NA
BUILDING PERMITS (Total Dollar Value in Thousands)						
Maricopa County	July	361,742	13	-5	2,342,890	-6
Pima County	July	52,522	11	-17	365,544	-31
Balance of State	July	52,326	-32	-25	376,630	0
Arizona	July	466,590	5	-9	3,085,064	-9
TOTAL HOUSING UNITS AUTHORIZED						
Maricopa County	July	2,731	34	-22	17,226	-42
Pima County	July	490	14	-60	4,126	-45
Balance of State	July	750	-24	-37	5,910	-24
Arizona	July	3,971	14	-33	27,262	-40
HOME SALES						
Maricopa County - Number	July	5,740	-11	6	36,590	8
Maricopa County - Median Price	July	80,800	-0.2	2.3	79,500	3.2
HOUSING AFFORDABILITY INDEXES						
Metropolitan Phoenix - New Homes	2nd Qtr.	96	-5.9	1.1	NA	NA
Metropolitan Phoenix - Resale Homes	2nd Qtr.	109	-10.7	0.9	NA	NA
MORTGAGE INTEREST RATES (Conventional, 30-year, Fixed-rate)						
Maricopa County	August	10.3	2.0	3.0	NA	NA
POPULATION ESTIMATES (In Thousands)						
Maricopa County	2nd Qtr.	1,970	0.6	3.6	NA	NA
Arizona	2nd Qtr.	3,440	0.6	3.2	NA	NA
ELECTRICAL POWER SALES (In Millions of Kilowatt Hours)						
Arizona	July	3,947	4.4	4.3	22,432	7.9

NA = Not Applicable

Source: Center for Business Research, College of Business, Arizona State University

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